

STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of: Docket #99-DIST-GEN-(2)

Exploring Revisions to)
Current Interconnection)
Rules Between Investor-)
Owned and Publicly-Owned)
Utility Distribution)
Companies and Distributed)
Generators)
)
Evaluating CEQA Procedures))
for Siting Distributed)
Generation Facilities)

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA 95814

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Valorie Phillips
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PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

A P P E A R A N C E S

CALIFORNIA ENERGY COMMISSION STAFF

Robert Pernell, Presiding Commissioner

Robert Laurie, Commissioner

Mignon Marks, Advisor to Commissioner Laurie

Scott Tomashefsky, Advisor to Commissioner Laurie

Ellen Townsend-Smith, Advisor to Commissioner
Pernell

Tim Tutt, Renewable Energy Program

PANELISTS

Susan Horgan, Distributed Utility Associates

Edan Prabhu, Reflective Energies

Chris Marnay, Lawrence Berkeley National Labs

Stan Blazewicz, Arthur D. Little

Kevin Duggan, Capstone Turbines

Steven Greenberg, RealEnergy

David Rubin, PG&E

Scott Tomashefsky, Advisor to Commissioner Laurie

Julie Fitch, California Public Utilities
Commission

Jeanne Clinton, California Power Authority

Jonathan Teague, Department of General Services

Ali Miremadi, California Independent System
Operator

OTHER APPEARANCES

Jim Burke, Public Policy Institute of California

Rita Norton, Consultant

Steven Moss, San Francisco Community Power
Cooperative

Mark Berman, Davis Energy Group

Bob Fickes, California Oil Producers and Electric
Cooperative

Richard McCann, M Cubed

Len Walde, Sigma Energy Engineering, Inc.

Dennis Keane, PG&E

Loren Kaye, Kahl/Pownall Companies

Linda Sherif, Cogeneration Association of
California

Jeffrey D. Byron, Enerwise Global Technologies

Michael Theroux, Theroux Environmental

Cheryl Carter, Natural Resources Defense Council

Todd O'Connor, O'Connor Consulting Services

Mark Banks, Planergy International

Kari Smith, PowerLight Corporation

Hazlyn Fortune, California Public Utilities
Commission, Office of Rate Payer Advocates

Steve Torres, Fuel Cell Energy

Charles (Chach) Curtis, Northern Power Systems

Daniel Gallagher, Victor Valley Wastewater
Reclamation Authority

Gordon Gaddy, Fuels from Farming for a Growing
Future

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1 P R O C E E D I N G S

2 9:30 a.m.

3 PRESIDING COMMISSIONER LAURIE: Ladies
4 and gentlemen, good morning. Welcome to this
5 workshop on the distributed generation strategic
6 plan. My name is Robert Laurie, Commissioner of
7 the Energy Commission, presiding member of the
8 Siting Committee.

9 To my right is my colleague,
10 Commissioner Robert Pernell, who serves with me on
11 the Siting Committee. To my left is my advisor,
12 Ms. Mignon Marks, and Commissioner Pernell's
13 advisor, Ellen Townsend-Smith, will be joining us
14 shortly.

15 Just a few introductory comments. This
16 proceeding is being both transcribed and broadcast
17 on the web; thus, the microphone systems will be
18 an essential part of this proceeding. Should they
19 cease to function, as they would generally do
20 during the course of any day, we will halt the
21 proceedings and have it corrected.

22 I would also ask you, these microphones
23 are extremely sensitive instruments. We cannot
24 hear you unless you are eating them, so when you
25 speak into the microphone, please get very close

1 to it; otherwise, we won't be able to hear you
2 very well, and the acoustics, the natural
3 acoustics in this room are very poor.

4 The purpose of this workshop I think was
5 pretty well set forth in the notice; that is, the
6 Energy Commission is committed to doing a
7 strategic plan on distributed generation for two
8 reasons: One, to ensure that all issues related
9 to distributed generation within the Energy
10 Commission itself are guided by a singular set of
11 principles and goals to ensure a uniform outcome.

12 Secondly, it is hoped that these
13 proceedings will help the State of California,
14 among its various agencies, develop a uniform set
15 of principles and goals and outcomes, as it
16 relates to distributed generation. Because
17 currently, that is not the case. So that is our
18 purpose.

19 Our staff, Mr. Tomashefsky and Ms. Marks
20 have been organizing the effort thus far. We
21 would expect upon the completion of this workshop
22 the initial preparation of a draft document. This
23 is not going to be a year-long document, it will
24 be prepared in a matter of weeks or, at the most,
25 a few short months. Because we were anxious to

1 get a work product out.

2 Let me ask Commissioner Pernell, Robert,
3 do you have any comments at this point?

4 COMMISSIONER PERNELL: Thank you,
5 Commissioner Laurie. I would just say good
6 morning and welcome to the Energy Commission.
7 Nice to see all of you interested in distributor
8 gen, and I think it's in the public interest to
9 encourage the development of distributor
10 generation in a way that it has a positive effect
11 on California.

12 And I think that's what we're trying to
13 do here today, and I'm sure we'll accomplish that
14 goal with your input and patience. So thank you
15 for being here.

16 PRESIDING COMMISSIONER LAURIE: Thank
17 you, Robert.

18 At this time I'd like to call on Scott
19 Tomashefsky to give an overview of what we intend
20 to accomplish at this workshop, and then I'll
21 simply ask if there are any questions among you
22 all before we proceed.

23 Scott?

24 ADVISOR TOMASHEFSKY: Thank you,
25 Commissioner Laurie.

1 Good morning, welcome everyone. I guess
2 a couple of logistics: There is a sign-in sheet
3 if you haven't seen it on the table outside, right
4 around that side over there. If you can sign in
5 at some point today, that would be great. There
6 are copies of written comments that have been
7 submitted so far. There should be eight sets of
8 comments out there. If there are not, let us know
9 and we are going to post each of the written
10 comments on our web site. We already have them
11 posted there, but to the extent that they're not,
12 please let us know.

13 Also, there is a copy of the PIER
14 Strategic Distributed Energy Resources Research
15 Assessment Final Report, which is something we
16 were working on last summer. Some of the
17 continuation work related to this project is
18 helping us in this effort today and is continuing
19 through the PIER project, so please pick up a copy
20 if you would like.

21 PRESIDING COMMISSIONER LAURIE: Can the
22 folks in the back hear at all?

23 ADVISOR TOMASHEFSKY: They can't hear?

24 PRESIDING COMMISSIONER LAURIE: Yes?

25 Okay.

1 ADVISOR TOMASHEFSKY: I will attempt to
2 eat the microphone, as you have suggested.

3 Okay. In terms of our agenda, what
4 we're -- Oh, one other housekeeping note. Do not
5 go out the door on the Peachtree side, you'll
6 probably hear a siren go off, so you don't want to
7 do that. If you're going to actually go out of
8 the building, go out the main doors behind us over
9 here.

10 Also, although we do have added security
11 in the building here, you're actually okay with
12 going up into the snack bar, if you need to get a
13 drink. You can go up the stairs and you won't
14 have to do any checking in as you would if you
15 ordinarily visit here. So just kind of keep those
16 things in mind.

17 In terms of the agenda, the first
18 portion of the discussion will look at the
19 visionary aspects of a strategic plan. Susan
20 Horgan from Distributed Utilities Associates will
21 be starting that discussion, followed by Edan
22 Prabhu and Chris Marnay, if he is able to make it
23 here today; I'm not sure if that's going to be the
24 case.

25 MS. HORGAN: He's here and he's back

1 there.

2 ADVISOR TOMASHEFSKY: He is here?

3 MS. HORGAN: He's shy. He wants to

4 sit --

5 ADVISOR TOMASHEFSKY: Hi, Chris. Thank

6 you. Thank you for showing. Hope you enjoyed

7 your trip to your --

8 After that, the second portion of the
9 discussion is going to focus on the notion of we
10 tend to focus a lot of interest in how the public
11 agencies deal with areas related to distributed
12 generation, but ultimately the -- we have to be
13 very cognizant about private investment. And
14 without private investment, there won't be an
15 industry. So we're going to get some input from
16 A. D. Little on the development of business
17 models, thinking of it from a private investment
18 perspective, which is important for us to hear.

19 Beyond that, then we'll go to deployment
20 and barriers, if you want to call it another term.
21 We'll have some folks talking about that. Kevin
22 Duggan will be talking from a manufacturer's
23 standpoint; Steve Greenberg from RealEnergy will
24 be talking about it from an implementer's
25 standpoint, and then David Rubin from PG&E will

1 give you a utility perspective on that.

2 After our lunch break, we will then go
3 into a parade of governmental discussion to get an
4 idea of what we are doing as far as state
5 agencies, with respect to DG. And from that point
6 on, then we'll talk about goals and direction and
7 wrap it up.

8 So that's about the extent of it.

9 COMMISSIONER PERNELL: Thank you.

10 Let me ask the audience, at this point,
11 any introductory questions, not on substantive
12 issues but on procedural issues, questions as to
13 how we're going to proceed today?

14 Our apologies for the inconvenience
15 relating to security. The Energy Commissioners
16 have attempted to convince ourselves that we're
17 important, and the only way we can do that is to
18 provide additional security for ourselves, and it
19 seems to be very effective.

20 At this point, then, Scott, are you
21 ready to initiate the first panel?

22 ADVISOR TOMASHEFSKY: Absolutely.

23 COMMISSIONER PERNELL: Please.

24 ADVISOR TOMASHEFSKY: Thank you.

25 COMMISSIONER PERNELL: Thank you. And

1 would you care to make those introductions for us?

2 ADVISOR TOMASHEFSKY: I'd be happy to do
3 that.

4 COMMISSIONER PERNELL: Thank you.

5 ADVISOR TOMASHEFSKY: Do you want to
6 come up to the dais as well, as well you, Chris?
7 And Stan is going to stay there for purposes of
8 the next panel, but he's welcome to sit and -- he
9 could stay there.

10 A strategic plan is really no strategic
11 plan without a vision of where things need to go,
12 so we have put together a panel of folks that can
13 provide us some insight as to where they think we
14 should go and where strategic plans should focus
15 on, in terms of statewide direction.

16 We have Susan Horgan from Distributed
17 Utility Associates, Edan Prabhu from Reflective
18 Energies, and Chris Marnay from Lawrence Berkeley
19 Labs. I'll turn it over to Susan, and just let me
20 know when you want me to turn the slides.

21 PRESIDING COMMISSIONER LAURIE:

22 Ms. Horgan, good morning.

23 MS. HORGAN: Good morning, Commissioner
24 Laurie; good morning, Commissioner Pernell.

25 Can you let me know if you can hear me,

1 because this is -- I have two microphones here,
2 and the court --

3 COMMISSIONER PERNELL: The one you have,
4 the one you're speaking into is the amplifying
5 microphone.

6 MS. HORGAN: Okay. All right.

7 Good morning. Now, I can't see what's
8 behind me, so I'm going to hope that he's talking
9 about whatever it is that's --

10 PRESIDING COMMISSIONER LAURIE: You
11 would be amazed.

12 [Laughter]

13 MS. HORGAN: So if there are rabbit ears
14 and stuff like that, I won't mind.

15 What I'm going to do is a little back to
16 the future. There is a number of you in this room
17 that I see that I've known for many years who can
18 give this talk just as well as I can; in fact, I'm
19 giving it today for Joe Iannucci, who is out on
20 vacation, but he also knows that there are many of
21 you in this room who can do this.

22 But what we talked about was looking at
23 the vision that we had a number of years ago, even
24 back in the PG&S Research Department, and then
25 it's a bit of an evolution over the last few

1 years, see if it still rings true, see if we're
2 still headed in that same direction. My
3 suggestion to you is that everything I'm about to
4 say has been true for a number of years, and we
5 are just seeing a lot of it bear fruit. I would
6 welcome any comments or corrections that some
7 might suggest, and so here we go.

8 This slide you'll see here was created
9 about ten years ago, when we were in the PG&E
10 Research Department, and what it shows on your
11 left there is the utility of, what we would say
12 today, the central station structured utility,
13 customers at the end in case of the California
14 utilities, mostly at the end of long radial
15 feeders. Then we looked at, well, what -- how
16 would this system evolve, which is the system on
17 the right, which is, as you see, still has central
18 generation as a very important point in the
19 system, but also has such things as small
20 distributed generation at the end of feeders.

21 And you can see, they're mostly there to
22 support customer load and they provide different,
23 sort of different applications and different
24 benefits for each type of customer. And we even
25 include remote and off-grade loads in that vision.

1 We don't see a lot different in that
2 vision today than we did a number of years ago.
3 We include renewable technologies, a variety of
4 them; we still look at fuel cells on the horizon,
5 we still hope that energy efficiency is an
6 important part of a distributed utility, and I see
7 J. Raggio smiling, so I think he must agree
8 with -- I'm hoping he agrees with me.

9 So I wanted to sort of set the stage so
10 we all see if we're on the same page with this. I
11 wanted to define distributed generation. We work
12 on a number of projects around the state and
13 around the country where this always comes up,
14 well, what is DG? Well, is DG 50 megawatts and is
15 it a peaking plant that's -- is it, you know, a
16 30-megawatt CHP plant that's connected at the
17 subtransmission level, what is it?

18 Well, we try to say that distributed
19 generation, for the most part, is a little bit
20 smaller than that, basically around, or under,
21 mostly under 10 megawatts, and it's connected to
22 the distribution system. It doesn't mean that we
23 would leave those other things out, but for the
24 most part what we're talking about is distribution
25 interconnection technologies.

1 They include storage, they include all
2 types of generation, and they, of course, include
3 DSM. And, for the most part, we would prefer,
4 from the distributed side, from utility
5 connection, that they be grade-connected, but they
6 don't necessarily have to be.

7 COMMISSIONER PERNELL: One question.
8 You were -- I'm over here.

9 MS. HORGAN: I'm trying to figure where
10 you're coming from, thank you.

11 COMMISSIONER PERNELL: You talked about
12 distributed generation, yet your slide said
13 distributed resources.

14 MS. HORGAN: Mm-hmm.

15 COMMISSIONER PERNELL: Are we talking
16 about the same thing?

17 MS. HORGAN: Yes. Distributed resources
18 encompass storage, generation, and energy
19 efficiency. So, rather than just listing all of
20 those out, we call those resources because they're
21 a resource to either a customer or a distribution
22 planner.

23 COMMISSIONER PERNELL: All right, thank
24 you.

25 MS. HORGAN: Yes, sure.

1 We have this view of the future that we
2 presented in the 1990's, and I don't think much
3 has changed also with this. We still look at
4 distributed generation with economies of mass
5 production, we know that that's the only
6 important, that is the important point of getting
7 small technologies out on the market, that we must
8 look to the mass production of them; that they are
9 smaller, that most of them are inherently cleaner,
10 that they help provide diversity in the system and
11 fuel security. They can keep customers
12 competitive, utilities competitive. They allow
13 for buying services, not just energy, and they
14 also provide the added possibility of being
15 greener.

16 From the system perspective, you can
17 manage and deliver energy services, providing
18 valuable services at the least cost and exploit
19 the economy's mass production with distributed
20 generation.

21 I wanted to talk a little about, since
22 this started on the utilities side, I wanted to
23 talk a little bit about the benefits to the
24 utility of using distributed generation. The
25 dispatchability for peak demand reduction is

1 important to a customer bill as well as to the
2 utility system. We can maximize use of standby
3 generators that are already there for these times
4 when it's appropriate to use them.

5 We feel that they're cost-effective
6 solutions that are consistent with the least cost
7 planning option. We would like to see them be
8 part of the tools of planning a utility system.
9 We suggest that they have the opportunity to
10 enhance voltage stability, help avoid line losses
11 or mitigate line losses, and we think that -- and
12 I know it says improve customer relations, but
13 it's really relationships. It creates
14 relationships between customers and utilities,
15 between third parties and utilities and customers,
16 and it creates a new transaction.

17 This is what I mean by assisting the
18 utility system. If you take a look at the second
19 line, which is sort of the average feeder in a
20 utility system, and this happens to be a PG&E
21 feeder or it happens to be an example of PG&E
22 system, but it's not any different than most
23 systems around the country.

24 But what you find is that very little,
25 less than ten percent of the year, feeders are

1 used to 100 percent of their capacity. In fact,
2 if you really look at it, it's like one to two
3 percent a year that the distribution system is
4 used at its capacity.

5 So you've spent -- the utility system
6 spends billions of dollars every year across the
7 United States keeping this so that the utilization
8 of these feeders for the one short period of time
9 that we need them -- two, three percent during the
10 year -- are available for electricity. What we
11 would suggest is that by using distributed
12 generation you would be able to cut these peaks
13 from these feeders and save quite a significant
14 amount of money.

15 Then you have the customer benefits of
16 DG. These are sort of the applications that
17 you've heard a lot about, I'm sure; specifically,
18 like bill reduction, through looking at peak
19 clipping with clipping your demand charge during
20 peak hours, usually during the summer.
21 Reliability improvement, not just power quality
22 but improving your reliability.

23 Sometimes there are industries around
24 the state and around the country that require much
25 greater reliability than the utility can provide.

1 Even though the utility's reliability is quite
2 superior, there are just sometimes that they need
3 something a little bit better. So in some cases,
4 rather than maybe running a second feed, putting
5 up backup generation or just having something
6 there to stand by will allow them the extra
7 flexibility of that reliability.

8 And that's true with the power quality
9 issue as well. It's not that the utility has
10 dirty power -- in fact, it's usually very clean --
11 but the opportunity to make it that much better
12 because of all of the power electronics that are
13 on the customer's side of the meter and this
14 allows for even a cleaner wave form coming in for
15 the customer.

16 Looking to the forces shaping these
17 opportunities, again, we see these as the
18 continuum from the last five, seven, eight years,
19 but still important points. One is customer
20 choice. I think we all have seen now that through
21 initiatives like in the city of San Francisco and
22 through other opportunities like CHP that
23 customers are looking for more from their energy
24 and power delivery. They're looking to have more
25 control, they're looking to have greater

1 efficiency, and so we think that's a very
2 important point of the vision of the future is
3 allowing customers to continue and to make more
4 choices.

5 The other is the restructuring of the
6 utility system. Although things go up and down,
7 we still think that that is not in its final
8 solution, and we'll see where that's also going.
9 But it also is an opportunity for distributed
10 generation through actually all portions of this
11 system, generation, transmission and distribution.
12 And, of course, the customer side that we just
13 talked about.

14 Technology innovation: Again, looking
15 towards the smaller, modular, mass-produced
16 technologies that we expect to see in the future
17 and are showing promise now. And then, of course,
18 societal issues and trends, wanting not just more
19 control, but wanting to preserve and enhance the
20 environment in which people live.

21 So this might be a little bit redundant,
22 but we're talking about restructuring the evolving
23 regulatory drive, that customers have the choice
24 to generate their own electricity, to generate for
25 their own needs when they desire it, and their

1 increasing need to differentiate their
2 applications, like reliability that we talked
3 about and the power quality that we've talked
4 about, and also providing their stewardship.

5 I will use another acronym here, you'll
6 see DU. We refer to DU as the distributed
7 utility, and it encompasses all of the issues that
8 we talked about in distributed resources.

9 I also have noticed in the last few
10 weeks even a couple of new terms for distributed
11 generation. Of course, some of you have probably
12 heard dispersed generation. I heard -- Well, I
13 can't think of it, but I heard another one
14 yesterday that I had never heard in ten years, so
15 they're still coming up with new names for it,
16 another organization needing to differentiate
17 their thoughts on it.

18 I also wanted to make sure that we
19 included demand-side management, which we think is
20 an important part of the distributed generators,
21 that that kilowatt that you don't need is just as
22 important as the next one that you need to
23 generate.

24 And I think we've -- we talked about
25 these a little bit, but I guess the only one I

1 haven't mentioned is the cogeneration, which is
2 combined heat and power, offering customers the
3 opportunity for greater efficiency.

4 The technology forces that we again have
5 seen before and are continuing to see are smaller,
6 they're more modular so that you can put them
7 together in packages with greater flexibility,
8 they're shifting the economies of scale from
9 packaging central generation plants to packaging
10 smaller and being able to put them in quicker,
11 from putting in two 1,000-megawatt plants to
12 putting in a couple of 50-megawatt plants and even
13 smaller. The smaller the plant, maybe the quicker
14 the opportunity of putting that in to meet a
15 customer's need in maybe a seasonal aspect or
16 meeting a new rate, or meeting an opportunity for
17 growth in a fast-growing feeder in the
18 distribution system.

19 We think this is going to continue to be
20 driven by technology push, the expanding array of
21 new technologies that are coming into the market
22 that are becoming more cost-competitive, and, of
23 course, the increasing efficiency of engines that
24 are here and available today and are very useful
25 and are even becoming more efficient.

1 So I'm going to sum up in three bullets:

2 The benefits or the perspective from the
3 opportunity for the electric utility. I'm not
4 saying that the regulation all supports this at
5 this point, but this is the opportunity that's
6 available. And it would be better asset
7 utilization for the utility, improved operation,
8 and new customer products and services.

9 From the customer perspective, we're
10 going to be talking about lower energy prices,
11 lower energy bills, better service, and also new
12 service for them to ensure greater control of
13 their needs.

14 I also threw in one about the gas
15 utility, that they sort of have not been talked
16 about as much in this arena, but we would see
17 increased gas sales, being able to fill in peaks
18 and valleys from the gas systems that are loaded
19 during certain parts of the year, particularly in
20 the winter and not so much in the summer. Again,
21 this would be not just in California but across
22 the country, and new products and services for the
23 gas utilities as well.

24 What are the important technology
25 characteristics? Again, that these be mass-

1 produced, that they be modular and clean, that
2 they're natural-gas-based or that the fuel is a
3 renewable fuel, that we take advantage of
4 cogeneration or CHP-combined heat and power
5 opportunities -- In fact, many of these are
6 supported by domestic industries. That they're
7 small, efficient, reliable, and, in fact, also, we
8 have this hybrids up here, which hybrids could
9 mean renewable and gas-based technologies, or
10 multiple-gas-based technologies or multiple-
11 renewable with storage technologies. So that
12 hybrid covers a lot of ground.

13 But we think it also boils down to the
14 economics for DG, and we also think that it's two
15 different types of economics: It's standard
16 utility economics and customer economics. So
17 you'll see on the left, is DG the least expensive
18 way to serve a customer, if you combine the fuel
19 costs, the avoided generation costs, the avoided
20 transmission costs, the avoided distribution
21 costs? So what's the cost of service? Is it
22 cheaper to serve that customer through a
23 distributed generation, or is it cheaper to use
24 the standard utility method of bringing a new line
25 into that customer?

1 So you have those economics, then you
2 have the customer economics, which is, is DG the
3 least expensive way for me to function in my
4 business? Is it -- If I look at my bills, am I
5 able to reduce them? We're not. So when you look
6 into the future and we say, well, yes, we know
7 that or we believe and we think we know that DG
8 has a great benefit to the utility system, do we
9 think that the utility system will drive the
10 implementation of distributed generation?

11 And our response is no, we don't think
12 so. We think that about 90 percent of DG
13 applications will be driven by the customers, and
14 about ten percent will be driven by the utility
15 needs.

16 So in the best of all worlds, what would
17 we have? Well, free market where economics make
18 the decision, where environmental issues are
19 included, that we think that it is important to
20 take into account the true costs of emissions, and
21 that we have cooperation from all parties.

22 I'd say what do we have now? Well, we
23 have a utility monopoly system that's been
24 entrenched for about a hundred years, and we know
25 that these things don't change overnight. From

1 what we've seen, we don't expect that to tomorrow
2 wake up and it will be a different world, but we
3 do expect the change to continue and evolve.

4 We think that this last statement is
5 true, that customers are bewildered by what their
6 power future looks like. Sometimes they're a
7 little bit oblivious to, well, my bill went up,
8 was that my gas bill, my electric bill? I don't
9 know and I need to get a better handle on what it
10 is that this bill is in front of me. And we also
11 feel at this point they feel a little bit
12 powerless to have any control over that.

13 We also think that we have yesterday's
14 rules being applied to today in a changing world,
15 we have different technologies, and we have a
16 monopoly situation that might not respond to the
17 changing technology vision.

18 We're going to talk a little bit about
19 barriers. These barriers are not new, and some of
20 them are being addressed. We have the technical
21 barriers, which would include interconnection,
22 seamless cookie-cutter ability to interconnect
23 distributed generation into the utility systems
24 seems very important, and I would congratulate
25 Scott Tomashefsky on all the work he's doing with

1 Rule 21. And we also know that not just
2 California is looking at this issue, but other
3 states like Texas and New York. Of course, the
4 IEEE P1547 is very important in this.

5 We also think that there still are some
6 technology barriers that we need to drive the
7 costs down on those technologies, and we need to
8 bring them sooner than 2010.

9 We also need tools that we don't have to
10 do analysis of where distributed generation is, or
11 storage is best utilized in the system, and I
12 would suggest that those tools are not yet
13 available.

14 We also have other institutional
15 barriers which include regulation, new business
16 models which Stan is going to talk about, and new
17 regulatory structures, including environmental
18 structures for siting and permitting of
19 distributed generation, making sure that what goes
20 in is the cleanest and most efficient, but also
21 giving credit for technologies that are inherently
22 low-emitting.

23 So what does tomorrow's power market
24 look like? Well, hopefully, we have more choices.
25 Hopefully, we have lower costs, that they're eco-

1 efficient, so they're environmentally friendly,
2 that we can sustain them. We call this a full-
3 product range: What color is your electron? Is
4 it green, is it brown, is it black, is it
5 whatever, and which way it does it flow? Does it
6 matter which way it flows?

7 We see this McDonald's Meets Thomas
8 Edison. So is there a microturbine at every
9 McDonald's? Kevin?

10 [Laughter]

11 MS. HORGAN: Okay. So we also think
12 that DG is a good hedge, not what's just for
13 customers, but in the distribution system. And
14 that there is a lot of enabling technology work
15 that also needs to be done in interface and
16 control, such things as the virtual power plant,
17 which is an ENCORP product, which is the
18 connection and control between the customer and
19 the utility system, which provides what we call
20 omnidirectional power flow and responds to price
21 signals and changes in the spot market.

22 So we could talk forever on a lot of
23 those buzz words that we threw out there a little
24 bit, but just in conclusion I just want to talk a
25 little bit about the market. We've done --

1 Distributed Utility Associates and many others
2 have done lots of studies on what we think the
3 market for distributed generation is, and we've
4 done it under lots of regulatory structures and
5 environmental regulations.

6 What we see, though, is significant
7 potential for the technologies that are coming on
8 line, and that it's here and that it's relatively
9 short-term. We've looked at a lot of regulation,
10 particularly from the environmental perspective,
11 looking at what is the market opportunity for DG,
12 what's new environmental regulations, and we still
13 see distributed generation making great inroads in
14 the next few years.

15 We think the concept is becoming
16 mainstream. I think just by virtue of all of the
17 people that I've seen over the last month in
18 Washington and in Sacramento and in Texas that
19 know what distributed generation in some form or
20 another is, whether it's storage or renewables or
21 interconnected or not, just the probably thousand
22 people that I've seen in the last ten days talking
23 on this subject would tell me that it's here to
24 stay, that it is mainstream and that we're
25 continuing to evolve the theory around it.

1 That we think it's a viable way to meet
2 not just energy needs in California but around the
3 world in emerging markets. So you see that this
4 says, "Utility concept is mainstreamed." The next
5 step says, "How do we develop the mind-set?" How
6 do we get people on the same road, headed down the
7 same path, even if they are using different tools?
8 We could talk a little -- a lot, actually, about
9 the policy that would do that, and the tools that
10 are necessary to evaluate whether we are moving
11 down the right road.

12 PRESIDING COMMISSIONER LAURIE: Susan,
13 we will want to save these for, these discussion
14 points --

15 MS. HORGAN: Points for later?

16 PRESIDING COMMISSIONER LAURIE: -- for
17 some questions. So if you can get to your
18 conclusionary remarks, we want to be able to save
19 time for questions of you, particularly.

20 MS. HORGAN: Well, I would suggest that
21 that's -- These were just things I was throwing
22 out for people to question, and question to say
23 whether these are still valid, whether this is the
24 path we're headed on or not. So I would just
25 suggest that it's -- this is an issue that's not

1 going away and that we are continuing to look to
2 it for answering needs in the future.

3 Thank you.

4 PRESIDING COMMISSIONER LAURIE: Thank
5 you very much.

6 Before we go on to our next speaker,
7 ladies and gentlemen, we do have some chairs that
8 are available. You do not have to sit up front,
9 you can find them, and Scott, maybe you can talk
10 to somebody and see if we have extra chairs
11 outside. We want to make folks as comfortable as
12 possible.

13 In order to ensure that everybody has
14 sufficient time to speak, we're not going to cut
15 anybody off, we are behind schedule, so there will
16 be no rest room breaks. If you get up out of your
17 chair to go to the rest rooms, the alarms will go
18 off and we will have to make inquiry.

19 [Laughter]

20 PRESIDING COMMISSIONER LAURIE: Again,
21 everybody has valuable input and we are going to
22 get through everybody, even if it means cutting
23 lunch short, so patience would be appreciated.

24 Again, Susan, thank you very much --

25 COMMISSIONER PERNELL: Thank you, Susan.

1 PRESIDING COMMISSIONER LAURIE: -- and
2 we're going to make sure that we have time for
3 questions.

4 Scott, did you want to introduce Edan?

5 ADVISOR TOMASHEFSKY: It's like a lob in
6 tennis. This is a man that needs no introduction.
7 Edan Prabhu is with Reflective Energies, he has
8 been instrumental in helping our work, in
9 development of interconnection standards, and has
10 provided a lot of technical expertise to a lot of
11 the work that's going on in the PIER Group.

12 So, with that, I'll turn it over to
13 Edan.

14 MR. PRABHU: Thank you, Scott,
15 Commissioners. It's been a real pleasure to be
16 here.

17 PRESIDING COMMISSIONER LAURIE: Good
18 morning.

19 MR. PRABHU: Good morning to you and
20 glad to see such a large audience in attendance
21 for a distributed generation strategic workshop.

22 I was at the original round table that
23 Commissioner Rakao and Roy had set up in 1995.
24 That's six years ago. It's been a long time and
25 lots of interesting things have happened in that

1 time. Through that period I've tended to get the
2 reputation as one of the more controversial
3 distributed generation opinion people. That's
4 not true, I strongly disagree. Provocative,
5 maybe; controversial, no.

6 And DG is going worldwide. Next week I
7 leave on a USAID mission to India, promoting
8 distributed generation. The reason I took that
9 assignment is I thought it was a joke. India
10 probably has more distributed generation than the
11 rest of the world combined. Every middle class
12 family has storage in the home. Every store has a
13 little Honda generator sitting outside. And we'll
14 go briefly later into the causes of why it's so
15 popular in certain places. There are many
16 countries in Africa where the sum total of the
17 distributed generation is three times the grid
18 generation.

19 We're struggling with it here today for
20 some very interesting reasons. I might be
21 switching between this pointer, which they allowed
22 me to carry on the airplane, amazingly, and this
23 pointer over here, which I hope will work. And I
24 have to apologize for just one thing. I threw
25 away my entire presentation last night, because I

1 figured you know all the things that have happened
2 over the last six years, and I started a brand new
3 presentation starting at about 6:00 o'clock last
4 night, so catch the errors for me.

5 Will it take over? So far it's been
6 growing, but very, very slow. And this is much
7 more of a snapshot of where we are than a
8 strategic vision. I'd like to go from the
9 snapshot of where we are today into the future.

10 Are these applications moving more
11 rapidly through the system? Is DG getting
12 approved quicker than it used to? There were some
13 studies that showed, one major study that showed
14 that DG languishes forever, because the utilities
15 tend to stall it. Well, DG has been a constant
16 battle between the good guys, which are the DG
17 developers, and the people with the fuel and the
18 people with the need, and the nice guys, who are
19 the utilities. Because there's really no bad
20 person in the bunch.

21 Technology has started some of the
22 thinking, new ideas have come in, but there is no
23 big bad oil company like there once used to be, or
24 a big railroad smothering, it's changes that are
25 causing people to behave in different ways, and we

1 really have to work together and figure out how to
2 work together to get these changes made.

3 There are a few horror stories. I get
4 calls at least once a month about this terrible,
5 horrible utility that absolutely stonewalled
6 everything and charged \$600,000 for a friendly
7 phone conversation -- We'll get into the details
8 of that.

9 What is the real picture? Well, here is
10 a snapshot of DG applications for Southern
11 California Edison since January 2001. And I have
12 to give full credit to Mr. Tomashefsky for
13 squeezing this information out, and we do get this
14 now on a monthly basis. I have analyzed this
15 data, not as a representation of the whole world,
16 but as a snapshot of a specific point in time.

17 Edison is generally considered an easy
18 utility to get along with on DG these days. They
19 have been helpful, they've set up some very
20 interesting procedures, so let's look at the
21 numbers. The total capacity is about 300
22 megawatts, give or take, over the last 12 months.

23 In Engineering Review, there are 25
24 applications totaling 228 megawatts. Large
25 number, but wipe those lenses and look again --

1 Well, let me keep talking while this thing works.

2 Several very large generators were part
3 of that 228 megawatts; in fact, just three of them
4 took two-thirds of that. Is that distributed
5 generation, does it meet Susan's 10-megawatt rule?
6 Heck, no. Is it less than these 1100-megawatt
7 power plants that people have been putting in?
8 Heck, yes.

9 Okay. So there is big generation going
10 in, and it is benefiting, interestingly, from the
11 new Rule 21, because the application process and
12 other things are helping it. Is little generation
13 going in? Yes, that too. Let's go down this
14 chart.

15 Level two, the review is complete. It's
16 9.1 megawatts, and the largest of those is six
17 megawatts. Here's the other numbers. There's a
18 97-megawatt, a 67-megawatt, 19 and 10 megawatts
19 are the largest of these in Engineering Review
20 over the last little over 12 months.

21 Contract to the Customer: There are 20
22 applications that have been returned to the
23 customer from that time period totaling 36
24 megawatts, and most of these you can see are
25 rather small.

1 Contracts Signed: There's four with 10
2 megawatts, most of it is just one big machine.
3 And these took about three to nine months time
4 frame to make that happen.

5 And the last category, Approved and
6 Online: There are ten projects totaling 33
7 megawatts, and the largest of those is 12
8 megawatts. These are over the last year. The
9 average time for approval online for this set was
10 only four months. The record, from application to
11 online, was two weeks. So somebody in one utility
12 is doing a nice job.

13 But the general picture you get is that
14 things are getting better. There are other things
15 happening like certification and all that are
16 speeding it up, and we're going to talk about that
17 in a little while.

18 Let's look at technologies. You know,
19 there is this whole plethora of new DG
20 technologies. What are they doing? The companies
21 offering DG are changing. The half-life of a DG
22 company is three years. The half-life of a PV
23 company is also three years. That is very good
24 news, compared to the half-life of an Internet
25 start-up company. So there is longevity of some

1 kind.

2 Microturbine deployments are later than
3 projected, but generally, they've been more rapid
4 than other new technologies. Six years ago I
5 didn't know how to spell microturbine. I did know
6 how to spell fuel cell. Fuel cells continue to
7 have public policy, but they are not yet
8 commonplace.

9 IC engines and gas, large gas turbines
10 continue to be the workhorse of the industry.
11 Surprise? Not to me. PV does well with hefty
12 supports, but it's not yet too cheap to meter.
13 And PV tends to go, it has tended to go either
14 with a fear factor or with the price support
15 factor, it tends to become very popular, and then
16 it tends to subside.

17 And again, being provocative, I would
18 say that this price decline of PV has not yet, in
19 my opinion, materialized. It tends to shift out
20 every year by about a year.

21 Let's look at the split for this
22 particular basket of technologies in those Edison
23 applications I spoke of before. Ten diesel engine
24 applications totaling 80 megawatts. Every one of
25 them is emergency backup. IC engines are natural

1 gas; there are 18 applications for 30 megawatts,
2 and it's generally cogen.

3 Combustion turbines, there are four
4 applications for 194 megawatts. And
5 microturbines, there are 16 applications for a
6 total of about three megawatts, and it's a mixed
7 bag. Some of them were for waste gas, and some of
8 them are for people who needed the electricity.
9 And there was one fuel cell application for .23
10 megawatts and a cogen application.

11 So you can see that the bulk of
12 applications are large plants, well over 10
13 megawatts, hogging at least the megawatts in the
14 market. You can also see that the volume of
15 little units is starting to grow, but even those
16 tend to be very traditional.

17 Why are people installing DG? Emergency
18 backup, what I call the fear factor. People were
19 putting in photovoltaics when they feared Y2K was
20 going to black out the world. It was a big spike
21 in the PV industry. There were blackouts last
22 January and there was a spate of applications for
23 emergency backup.

24 Cogen continues to be an interesting
25 driver, and cogen is somewhat tricky. You have to

1 have loads that match, the heat and the
2 electricity and several other things, but cogen is
3 a very valuable and very long-range solution to
4 many of these issues, if you can find that
5 coexistence between heat and power.

6 Primary generation is another factor.
7 There are just a handful of folks who have given
8 up the grid, disconnect charges and all, to go
9 stand by, but, by and large, people like their
10 wires.

11 This is another very interesting market
12 coming up, which is to consume free fuel. If the
13 fuel is free, you are hedged from the vagaries of
14 the fossil fuel market, and LADWP put in 50 units
15 at a landfill in Lopez Canyon. I found out then
16 that they still had to pay something for the gas
17 that was coming out of the ground; even though it
18 was being flagged, they had to pay to buy it.

19 So things are free only as long as
20 somebody doesn't want it. As soon as somebody
21 says I like that stuff, the price goes up.

22 Net metering and self-generation have
23 been significant drivers. They have largely had
24 photovoltaics, because the biggest subsidies were
25 for photovoltaics, and the net metering applies

1 basically to solar and wind. This was an
2 interesting shocker to me. NOx Abatement is
3 selling new technology. The AQMD, the South Coast
4 AQMD bought dozens of machines to reduce the NOx
5 coming out of flares. And they paid for that with
6 fines they had levied on polluters. It's a most
7 interesting and unusual application.

8 And here is another one. Asthma is a
9 big issue now in the Los Angeles area and asthma
10 is considered caused by PM10, particulates in the
11 air. And the South Coast AQMD is also buying a
12 large number of machines to reduce the
13 particulates from diesels.

14 What about the -- What would be the
15 word -- the philosophical benefits of DG that
16 we've thought through? You know, small capital
17 investments, grid support, reduced line losses,
18 you know, stringing stuff out piece by piece by
19 piece so that you don't have a big chunk, match
20 load closely by adding little generators at a time
21 and those kinds of things. What about that? So
22 far, anyway?

23 PG&E had a big, the Kurman Substation
24 study about grid benefits and racking up all of
25 these incremental benefits. Edison has its solar

1 neighborhoods, where we were supporting
2 underground lines that were reaching the limits of
3 their tether by putting DG at the tail end. PV,
4 photovoltaics because it maxed the peak, summer
5 peak perfectly. What about all that?

6 There is no evidence, I couldn't find
7 any evidence that DG is being installed today to
8 gain those benefits. The primary reasons for DG
9 today appear to be energy security and energy
10 savings. Sounds rather old-fashioned, doesn't it?
11 But that is what I see to be today's reality,
12 despite these six years of what we've tried to do.

13 Public policy support is a close second.
14 As soon as public policy backs something, it tends
15 to go popular. But it tends to be cyclic: When
16 that support goes away, the popularity tends to
17 drop too.

18 Let's talk a little bit about the
19 regulations, the big ones, Rule 21 and IEEE 1547.
20 It was revised and is being revised as we speak,
21 and it's proven reasonably effective. You know,
22 time frames have shrunk, the number of
23 applications has increased, the violence of the
24 debate has dropped, because people have a forum to
25 vent. And they have a shock absorber sitting

1 right there who can absorb. And that makes a big
2 difference to how easily these things go in.

3 IEEE 1547 continues to be hotly debated
4 by people of good will. One out of ten e-mails in
5 this IEEE 1547 discussion is wonderful. And if
6 you can live through the other nine, it's worth
7 reading this particular one. And that happened as
8 recently as yesterday.

9 The barriers are coming down, partly
10 because of the new rule, but mostly because of
11 improved communications. Much as I would have
12 liked to have been part of developing that rule
13 and I'd like to give it credit, and we can give it
14 some, but it's the collegial debate that's solving
15 the real problems, in my mind.

16 It's high on policymakers' lists. DOE
17 is restructured to have a DER Division. USAID is
18 pushing DG globally. Several states have
19 legislation backing DG. It's big time in our
20 thinking. And I leave it to your judgment to see
21 whether that big-time thinking has been matched by
22 reality, based upon the real numbers so far.

23 Environmentalists seem to like DG. And
24 this is, again, a little puzzle to me, because in
25 those same stores in New Delhi where they fire up

1 all these Honda generators, you see people walking
2 around with gas masks. And I just last week saw a
3 series of e-mails saying be careful of the DOE
4 because they're trying to reduce the emissions to
5 be put out by DG.

6 Well, think about it. Emissions in the
7 middle of your city are far more damaging to your
8 health than emissions out on a mountainside or in
9 the middle of a desert. And hauling the fuel to
10 the city causes a lot more emissions than a big
11 pipeline into the desert. There are several sides
12 of that issue that need to be carefully thought
13 through.

14 It is not intuitively obvious to me, as
15 a passionate advocate of DG, why it is so popular.
16 In many ways, it doesn't make sense; in many ways
17 it does. I won't mention his name, but at least
18 some people have bought Capstone Turbines because
19 they are cute.

20 [Laughter]

21 MR. PRABHU: Many, many people buy PV
22 because it's neat. There are some very
23 interesting drivers that make DG popular.

24 What strategies should we pursue? And
25 this is not a vision-type thing, it's more a

1 shorter-range strategy, and it's one person's
2 opinion. Continue to improve Rule 21, start
3 certifying this equipment. The more a generator
4 looks like a refrigerator and is buyable like a
5 refrigerator, with an energy stamp on the darned
6 thing, the easier it will be to push DG forward.

7 Level the playing field for various
8 technologies. You know, stop backing fuel cells
9 over PV over this over that. Stipulate the
10 emissions, and then let them go fight it out. If
11 you can make a reciprocating engine with zero
12 emissions, wonderful. You know, cost and
13 emissions are the two things that we need to
14 consider in our cities. Efficiency is a subset of
15 those.

16 Support consumption of damaging
17 emissions, wherever there is something that is
18 causing pollution, such as NOx from a flare stack
19 or gas from a -- you know, vented from a coal
20 mine, and there is a means to use DG, to use that
21 up? That is a good thing. You've eaten up a
22 poison to do good; that needs support.

23 Continue to provide incentives to buy
24 down the cost of promising clean technologies, and
25 I realize that this is slightly a contradiction

1 with something I said earlier. And probably, to
2 me the most important one of all for the US, bring
3 the utilities inside the tent. Let's stop this
4 antagonistic behavior where we treat one side as
5 good and the other side as nice. Let us find a
6 way to make everybody win when we put little
7 generators in, and not let one side lose while the
8 other side wins.

9 The details of that last I'd like you to
10 think about on your own. Thank you very much for
11 your time, I appreciate it.

12 [Applause]

13 PRESIDING COMMISSIONER LAURIE:

14 Mr. Marnay?

15 MR. MARNAY: Hi, I'm Chris Marnay from
16 the Berkeley Lab, and I'm sorry I come with no
17 prepared transparencies or anything. Scott
18 already did his bit to save my professional
19 reputation by pointing out I just got back from
20 Europe late last night. So I'm going to ad lib a
21 little bit.

22 I'm going to really talk just about one
23 thing, which is the microgrid concept, which is
24 something that we've been working on at the
25 Berkeley Lab for a couple of years now. This work

1 is going on with funding from the Department of
2 Energy and California Energy Commission, and I
3 thank you.

4 The CERTS organization was formed, it
5 stands for Consortium for Electric Reliability
6 Technology Solutions. This was restarted by the
7 Department of Energy from a transmission
8 reliability program that disappeared a few years
9 ago. When it was restarted there were a number of
10 important issues related to the future of
11 transmission reliability that were put on the
12 agenda for research, and distributed generation
13 was one of those.

14 So, first of all, I have to say that the
15 fact that I'm working on distributed generation is
16 perhaps not the result of my own imagination, but
17 this is something that was put on the list for
18 CERTS and something that perhaps at the beginning
19 I was told I would be working on. But over this
20 period I have come to be something of a believer,
21 and certainly, in the time that we've been doing
22 work on the microgrid concept -- I mean, a lot of
23 it has really come together for me.

24 So what is the microgrid concept?

25 Really, there's three parts, I would say, in the

1 definition. The first is that it's a grouping of
2 small scale generators that are actually operated
3 and owned by customers or members of the
4 microgrid, and it's operated entirely or primarily
5 in their own interests. Secondly, it operates
6 semiautonomously from the main grid, and let me
7 introduce one more nice piece of jargon here,
8 which is macrogrid, where the macrogrid is what we
9 consider to be the power system as we know it
10 today.

11 The microgrid can operate either
12 synchronously and attached to the macrogrid, or
13 can, in fact, function independently from it, in
14 island mode, you might call it. So, in fact, and
15 maybe transfer between one and the other
16 relatively seamlessly. And then the third element
17 of the definition is really that it depends on
18 power electronics that are close to the generating
19 device to make all of this magic function.

20 As I said, it's a customer-controlled
21 device, customer-controlled system, sorry, and
22 there's perhaps one unique or at least a very
23 small number of points of interconnection between
24 the microgrid and the macrogrid. And, in fact,
25 all the interconnection issues as we see it take

1 place at this one unique point of interconnection.
2 And the interconnection itself could be something
3 as simple as a breaker, or it could be something
4 more sophisticated, but the key issue is there is
5 one unique point.

6 And downstream of that point, the
7 microgrid is really self-controlled, self-
8 organized, and really, connection and
9 disconnection of devices downstream of that point
10 is something that really shouldn't involve the
11 macrogrid at all, as long as everything that's
12 functioning at that unique point of interface is
13 legitimate.

14 As far as the economics are concerned,
15 and I think these points have already been
16 mentioned already, what makes this kind of a
17 system attractive is probably going to be related
18 to two key sources of benefits, the first being
19 combined heat and power opportunities, and we've
20 heard this mentioned already. When you bring
21 generation of power close to heat loads, then
22 you've got the opportunity of taking advantage of
23 using up some of the waste heat. And this can
24 dramatically change the economics of what
25 otherwise wouldn't be a particularly attractive

1 way of generating electricity.

2 One thing I think we perhaps forget is
3 that the current power system, in fact, is
4 organized along those lines, although we don't
5 think of it that way. And, in fact, power
6 generating stations are close to large sources of
7 cooling. So, in fact, dealing with a heat load
8 determines the location of power plants as we know
9 them today. How much better if we could put the
10 power plants where, in fact, we could use that
11 waste heat, rather than just finding a convenient
12 way of getting rid of it.

13 This also raises the question of
14 thinking about the fact that moving electricity
15 around is a lot easier than moving heat around.
16 So we tend to think of the organization of the
17 microgrid as, in many ways, something that's
18 organized around the heat loads rather than
19 organized around the power loads.

20 And then the other aspect that really
21 makes economics of this kind of a system at least
22 credible, if not attractive, is reliability, what
23 Edan calls the fear factor. And it is a very key
24 element of the microgrid concept that reliability
25 would be a driving force in the first instance,

1 and then, subsequently, organization of the
2 microgrid would be, to some extent, around
3 requirements for reliability. Particularly, it
4 might be designed around the notion that you want
5 generation very close to sensitive loads, and not
6 close to those that can be shed, if necessary.

7 And, in fact, unlike the current
8 macrogrid in which we've learned to live with the
9 notion of having a consistent universal lever of
10 power quality, or at least that's the ideal, not
11 always necessarily met in practice, but rather
12 around the notion that we determine the level of
13 power quality and reliability to fit the end use
14 device. And we try and design the microgrid
15 around the notion that we give the kind of power,
16 not necessarily to each and every, but at least to
17 groups of end users that's appropriate for the
18 requirements of the end use.

19 So, in terms of organization of the
20 microgrid, there's three real parts to it, and I
21 have to say that these parts are not necessarily
22 devices, per se. At this point they're really
23 concepts. And there's really three of them. One
24 is a microsource controller, which is a controller
25 that sits very close to microsources themselves,

1 generators, although it could also be storage
2 devices or loads. At this point I'm just really
3 going to focus on generators.

4 Secondly, an energy manager, which takes
5 of, in a sense, the external relationships and the
6 economics and maybe the environmental requirements
7 of the microgrid. And then thirdly, a protection
8 manager, which takes care of shedding load and
9 dealing with other issues that's necessary if the
10 microgrid connects or disconnects from the
11 macrogrid. So I'm just going to go through those.

12 The microsource controller is probably
13 an electronic device, and what drives our thinking
14 here really comes out of advances in power
15 electronics. And particularly, out of what we
16 know today as power inverters. I'm talking here
17 primarily about fairly small devices, maybe in the
18 10's or 100's of kilowatts range, and many of the
19 technologies that are emerging now actually
20 already rely on inverters for two different
21 reasons, the first being they're DC sources and
22 the power has to be inverted to AC, or secondly,
23 they're asynchronous devices, like microturbines,
24 that operate at very high frequency and cannot be
25 synchronized with a grid.

1 So in both those cases, these devices
2 depend on electronics to allow them to be
3 interconnected, and we think of the microsource
4 controller as something emerging from current
5 inverters, but a much more sophisticated device.
6 And what the microsource controller needs to be
7 able to do is to allow each of the generators
8 attached to them to be able to function in a safe,
9 reliable and pretty economic way in the absence of
10 very much external stimulus or external
11 information.

12 And our thinking here really derives
13 from the notion of trying to control a power
14 system with hundreds of thousands or millions of
15 small sources is not going to be out of function
16 in the very centralized, hierarchical way that the
17 current macro system works. In other words, there
18 has to be devices close to the generators that in
19 some way, perhaps you could call it passively, or
20 at least in the absence of a lot of active
21 information input is going to be able to make the
22 system function.

23 Now, we tend to believe that this can be
24 done by creating, as I said, more sophisticated
25 versions of what are current inverters, and most

1 of our research, I think, over the next few years
2 is really going to be aimed in the direction of
3 trying to make that a reality, trying to make
4 these devices something that's really functional
5 and readily available.

6 The other key aspect of the microsource
7 controllers is, and this has already been
8 mentioned, they have to allow a kind of plug-and-
9 play system. You have to be able to go out and
10 buy small generators, bring them home, as was
11 mentioned by Edan, like a refrigerator, and plug
12 it in and it has to work. And that means that it
13 has to work with this kind of controller already
14 in-built that will allow it to function within a
15 pre-existing microgrid without changing the
16 behavior or requiring any changes on the part of
17 the devices already installed. In other words,
18 this has to be a sort of passive and expandable
19 system.

20 The second element that I mentioned in
21 the microgrid is the notion of there being an
22 energy manager. And the energy manager could or
23 could not be a device, but really, its function is
24 to take care of what we think in terms of the
25 macrogrid is the traditional functions of unit

1 commitment and dispatch. In other words, it deals
2 with the economics of trying to run this microgrid
3 in some way that is at least close to being the
4 minimum cost functioning possible organization.

5 We imagine this being done by the energy
6 manager at least developing target levels of
7 operation that the microsource controllers can
8 follow. This target level of operation could just
9 be based on simple economics, or it could involve
10 relationships with the outside world, such as
11 providing interruptable load, as called upon by
12 the grid.

13 But the notion is, the important notion
14 is that communications between the energy manager
15 and the microsource controller are going to be
16 fairly minimal, and certainly are not going to
17 depend on very high-speed communications or a
18 hierarchical system to maintain stability and
19 safety.

20 I'll just mention one other thing. Edan
21 already mentioned, and it doesn't surprise me at
22 all, that he doesn't see many small-scale
23 generators at the moment being installed to
24 capture system benefits. And one of the reasons
25 for that is that the system benefits that are

1 often mentioned for distributed generation, and I
2 in no way question their existence, in my mind
3 seem to be things that are going to be very hard
4 for us to set up markets for, or in other words,
5 to set up a system of incentives such that the
6 microgrid is really going to be at a benefit from
7 providing them.

8 We tend to be a little skeptical of the
9 notion that microgrids are going to be exporting
10 much power to the main grid. The voltage step-up
11 and other technical issues are going to make that
12 very difficult in the short run. Although
13 certainly in the long run, the design and
14 operation of distribution systems could be changed
15 to make that possible, we tend to think in the
16 short run of the microgrid being, really
17 functioning for its own benefits, maybe providing
18 interruptable load, but not very much more into
19 the main macrogrid.

20 In terms of meeting environmental
21 constraints and other issues, this is also the job
22 of the energy manager. So, then, the third part
23 of the system that I mentioned was a protection
24 manager, and I won't go into this area very much,
25 I'm not an electrical engineer myself so I

1 probably couldn't go very far into it, but the
2 notion is simply that, obviously, you take care of
3 protection, you're going to have smart systems
4 within the microgrid that are going to be able to
5 shed load that's unnecessary in times of shortfall
6 and are going to be able to make the microgrid
7 function in a way that's acceptable to the
8 macrogrid.

9 So I think that's probably all I was
10 going to say. Luckily, coming with so few
11 prepared notes and so on, I maybe will do my part
12 to get us back on schedule here. So I'll just
13 close there.

14 PRESIDING COMMISSIONER LAURIE: Thank
15 you, Chris, very much.

16 We do want to take a few moments for
17 questions on the general topic. And we do want to
18 address the overall issue of the strategic plan
19 and what all it is that you think we should be
20 seeking to accomplish.

21 Let me ask Commissioner Pernell, Robert,
22 do you have any initial questions at this point?

23 COMMISSIONER PERNELL: Thank you,
24 Commissioner Laurie. I did have a few questions,
25 starting with Susan, I guess.

1 Susan, you indicated in your slides,
2 which I thought was a very good presentation,
3 about 90 percent of -- when we were talking about
4 distributed generation, you mentioned 10 megawatts
5 or smaller, and 90 percent of that would be
6 customer-driven and ten percent would be utility-
7 driven. And my question is, in the future do you
8 see a robust industry for distributed gen in the
9 residential sector?

10 MS. HORGAN: I think that depends on the
11 technologies, but if the ones that we're
12 suggesting, like fuel cells and, of course, PV
13 continue to remain popular, drop in cost, continue
14 their support, then yes, absolutely. Residential
15 customers would be very important to fuel cells
16 and PV, and the other way around. Those
17 technologies will be important to those customers,
18 and not just those technologies, but for example.

19 COMMISSIONER PERNELL: And there are a
20 number of barriers there. You know, on all of
21 these technologies, when you start talking about
22 the residential sector, one of those is cost.

23 MS. HORGAN: Yes.

24 COMMISSIONER PERNELL: Do you see the
25 technologies like the PV costs coming down? And,

1 if not, what would you suggest to bring that cost
2 down?

3 MS. HORGAN: Well, I could give you a
4 flippant answer, like with the electricity prices
5 that I paid over the summer I don't need PV to
6 come down a whole lot. But, and we always -- from
7 the last ten or twelve years -- I won't go further
8 than that, because it will make me sound older --
9 but we've talked --

10 COMMISSIONER PERNELL: Not as old as I
11 am, that's all right.

12 MS. HORGAN: -- we've talked about those
13 costs coming down, I'm not sure how much further
14 they can come down, I would leave that to folks
15 like Edan. But I know that the Vision 21 of DOE
16 certainly plans to bring fuel cells costs down,
17 engine costs coming down.

18 So I can't speak to PV, but certainly
19 other technologies we expect to drop dramatically.

20 COMMISSIONER PERNELL: Okay. Does
21 anyone else have an opinion on that, on the costs
22 coming down of PV or other distributed gen
23 technologies?

24 Okay.

25 MR. PRABHU: One comment on PV, PV is

1 very difficult to get into place on a mass basis.
2 You know, it's -- Everybody's home is different,
3 everybody's yard is different, everybody's trees
4 are different. If there's something small that
5 sits in like a refrigerator, it becomes a lot
6 easier.

7 COMMISSIONER PERNELL: Yeah, and I would
8 tend to agree with you, but the general public
9 seems to think that PV are more maybe sexier than
10 fuel cells sitting inside their houses, sometimes.

11 MS. HORGAN: Well, they can actually buy
12 PV. You can't get -- A residential customer can't
13 go buy fuel cells, but they can buy some PV unit;
14 even if it is rather expensive, they can. They
15 had a tour just a few weeks ago in Contra Costa
16 County of homes that had PV, and Joe Iannucci was
17 one of the folks who went on the tour. These were
18 just everyday citizens who had put PV on their
19 roofs and there was an open house to show a bunch
20 of them around the East Bay.

21 And it was very interesting, the
22 economics. There was a woman schoolteacher who
23 retired after 30 years and spent what I thought
24 was a ridiculous sum of money from her retirement
25 to put a PV system on her roof, but that's what

1 she wanted.

2 COMMISSIONER PERNELL: Okay.

3 MR. MARNAY: I would say one word on
4 that, if I might.

5 COMMISSIONER PERNELL: Go ahead.

6 MR. MARNAY: I think our belief in
7 microgrids is obviously built around the
8 assumption that the cost of these technologies is
9 going to fall through time, although as of now it
10 definitely seems true to us, that the good old
11 reciprocating engine with some kind of heat
12 recovery looks like the most attractive technology
13 there is at the moment.

14 You know, we do see fuel cells, because
15 of their particularly attractive environmental
16 characteristics, and, obviously, improvements in
17 technology certainly getting to be competitive a
18 decade or so from now. Microturbines are a little
19 bit more difficult to predict because it's a newer
20 technology. Although they are inherently simple
21 in nature, it's the power electronics that's
22 complicated in a microturbine, but not the
23 mechanical part of it. So it does seem that they
24 will start to become competitive.

25 As regards PV, one of their most

1 attractive aspects is really that it is an on-peak
2 source of power, and, therefore, a lot of the
3 benefits that they provide are benefits that go to
4 the system. And, as I already mentioned, it's
5 hard to see at the moment ways in which those
6 system benefits are really going to be accrued by
7 the owner of the PV system.

8 COMMISSIONER PERNELL: One final
9 question, and I have a list here but I don't want
10 to dominate all the time, which is unusual for me.

11 I think -- Also, this is for Susan, or
12 anyone at the table. You mentioned the --
13 everyone should be on the same page; in other
14 words, the utilities and the residential customers
15 should all be going down the same road as it
16 relates to distributed gen. And then you
17 mentioned some regulatory policies. Are you
18 suggesting that there be some regulatory rules and
19 all that to make everybody go down the same path?

20 MS. HORGAN: Yes.

21 COMMISSIONER PERNELL: Okay. That's it.

22 PRESIDING COMMISSIONER LAURIE: Okay.

23 Thank you.

24 Just briefly, we are going to do a
25 strategic plan here, as we've indicated. There

1 will certainly be those critics of that project
2 who will argue, legitimately, that this is an
3 issue that will be driven by economics, and that
4 governmental policy has no place in the debate.
5 And, again, I think that legitimate argument can
6 be made.

7 But given the fact that we have
8 determined to move forward on the analysis and the
9 thinking about what a state plan or at least an
10 energy commission plan should be, can I get your
11 sense as to, speaking to all members at the table,
12 what you think we should seek to accomplish by
13 this document that would be useful to the public
14 and to the industry in general?

15 MS. HORGAN: I'll take a stab first.
16 I'm sure that they will add all the things that I
17 missed, but I think it's important to make sure
18 that all of the players are encircled, are
19 included in this. Whether we talk about
20 residential, commercial, industrial customer,
21 there are lots of segments of that population that
22 could be well served by distributed generation and
23 I would suggest that we don't forget any of them.

24 There are the technical issues that need
25 to be solved, and I think the Energy Commission

1 can work through them, like Rule 21, like testing
2 the system and doing the modeling to see how the
3 interactions happen on the utility grid. There's,
4 of course, promoting the emissions-clean signature
5 of these technologies, and looking at the
6 transactions necessary to make it a win-win
7 partnership with the utility and the end-use
8 customer.

9 PRESIDING COMMISSIONER LAURIE: Thank
10 you.

11 Yes, Edan, please?

12 MR. PRABHU: Some things that are
13 happening and should keep happening: Simplify
14 interconnection -- big, big item. Standardize and
15 certify. That's the second one. I mean, even the
16 computer industry has learned how to standardize.
17 The charger for my new laptop is standardized.
18 Big shop. The battery is not, but the charger is.
19 So the distributed storage isn't standardized
20 either.

21 Add some fraction of the costs of DG
22 into the utility rate base. That will make them
23 smile, and those applications will whiz through
24 the system. Even if you have to fake what you add
25 to the rate base, give it to them. Add incentives

1 for clean technologies. The cleaner it is, the
2 more the incentive should be.

3 And add incentives to consume unwanted
4 waste. Our cities are loaded with unwanted waste,
5 and incentives should say if you reduce that
6 waste, you get a break. If you can reduce that
7 waste and make electricity, you get two breaks.
8 If you can do that without getting the utility
9 mad, you get three breaks.

10 Thank you.

11 PRESIDING COMMISSIONER LAURIE: Thank
12 you.

13 MR. MARNAY: Yeah, I don't think I have
14 much to add to that. Obviously, interconnection
15 is one of the key issues. As I already mentioned,
16 from our point of view, one of the key issues with
17 interconnection that's getting missed is the
18 notion of there being a clear point of
19 interconnection, a unique point downstream of
20 which the customer or the microgrid or the virtual
21 power plant, use whatever terminology you like, is
22 able, pretty much, to make its own decisions and
23 run its own power system.

24 One key element of your report that I
25 would emphasize would be not to try and preclude

1 any attractive alternatives that customers may be
2 able to come up with on their own. I think the
3 goal of your report should be to just create a
4 situation, and wherever there are attractive
5 options for distributed generation to be installed
6 and built, they will come into being with a
7 minimal amount of barriers. Standardization is
8 obviously very important.

9 In terms of incentives for clean
10 technologies, I would encourage you to
11 differentiate between the goals of the work that
12 you're embarking on here related to distributed
13 generation from the goal of encouraging clean
14 technologies. Yes, we want clean technologies to
15 be encouraged -- I'm all in favor of subsidizing
16 photovoltaics, fuel cells, or what other clean and
17 attractive technologies we would prefer to have
18 out there. But I would try to separate that issue
19 from the issue of trying to encourage distributed
20 generation in general. And certainly, I, as I've
21 already said, see one of the big benefits from
22 distributed generation being coming from better
23 use of thermal technologies through CHP and small-
24 scale CHP.

25 PRESIDING COMMISSIONER LAURIE: Thank

1 you, sir.

2 Yes, sir, Stanley?

3 MR. BLAZEWICZ: I haven't been
4 introduced yet. I'm Stan Blazewicz with Arthur D.
5 Little.

6 PRESIDING COMMISSIONER LAURIE: Thank
7 you.

8 MR. BLAZEWICZ: I'm going to address a
9 couple of benefits I think that you're going to
10 get out of this process of developing a strategy.
11 I think, one --

12 PRESIDING COMMISSIONER LAURIE: Let me
13 interrupt a second. Would you like to incorporate
14 this into your remarks without introduction? Let
15 me do that.

16 Let me ask if the other panel members
17 would be willing to stay where you are until
18 Stanley finishes his presentation, and then
19 perhaps we can get some questions from the
20 audience and then take a 20-second break. Can we
21 get the other panel members to sit still for a few
22 minutes?

23 Thank you.

24 Stanley, please.

25 MR. BLAZEWICZ: So I'm standing between

1 the break; is that --

2 [Laughter]

3 PRESIDING COMMISSIONER LAURIE: No, not
4 at all.

5 MR. BLAZEWICZ: All right.

6 First off, I want to thank the
7 Commissioners for the opportunity to speak today,
8 as well as to the audience. Along with Edan and
9 Susan and Chris, I'm continually amazed and
10 encouraged by the amount of interest in
11 distributed generation. It just continues to
12 build.

13 And also, what I've found interesting
14 over the past ten years is who has been interested
15 in it. It used to be ten years ago that it was a
16 bunch of engineers sitting in the room, talking
17 about technologies. Now we're getting more of the
18 financial community involved in this, the business
19 types, and that's been happening over the last few
20 years.

21 I'm going to introduce a new term,
22 because I don't think we've had enough terms for
23 what we're talking about here today. We're
24 calling it distributed energy resources. And
25 this -- Let me define that briefly. It's

1 basically the generation and storage that's
2 located close to the point of consumption.

3 What I'm going to talk about today is
4 business models, and this is some of the work that
5 we're doing for the PIER Energy Systems
6 Integration Program area. And it's -- business
7 models are, I think, often misunderstood by the
8 private industry, the way that they're used and
9 the way that they look at business models. And I
10 think by the public sector, they're completely
11 overlooked. I think that they're extremely
12 important, though, for this technology. We talk a
13 lot about technology, and I think there's as much
14 innovation that needs to go around business models
15 that needs to go around the technology itself.

16 So what I'm going to talk about here
17 today is I want to talk about why to study, why
18 even bother studying business models. We've
19 already started some work in this area and I want
20 to describe what we've learned so far, and then
21 talk about where we're going to go from here.

22 First, back over the summer, and some of
23 you are -- I recognize a lot of familiar faces --
24 a lot of you were involved in this, we examined
25 where we thought gaps existed to making

1 distributed energy a significant resource for
2 California. And we were looking at it from a
3 technology perspective: What is it that the PIER
4 Program could be working on to enable distributed
5 energy resources? And we looked in the area of
6 interconnection, grid effects, and market
7 integration. And the report that hopefully most
8 of you picked up, that report -- It didn't start
9 off being that thick, by the way, it's grown over
10 time -- that's the results of this work.

11 One of the things that we found during
12 the course of this work is there were some
13 consistent themes that kept coming out, that
14 despite us wanting to talk about technology,
15 people would bring us back to these things over
16 and over again. And I wanted to share some of
17 those today and also to set the framework of why
18 we talk about business models.

19 First off, in interconnection, Edan has
20 already discussed, as well as Susan, that there
21 has been a tremendous amount of work that's been
22 done in the interconnection area, particularly in
23 California, but it's still -- the feeling was that
24 we're still just hitting the tip of the iceberg
25 and there's a lot more that needs to be done, as

1 Edan mentioned.

2 We felt that it was important to talk
3 about the grid effects, rather than just the grid
4 impacts, what are the positive things that
5 distributed energy can bring to the system.
6 Microgrids was another area that kept coming up,
7 that there was a lot of interest in microgrids,
8 and Chris has already talked quite a bit about
9 that, explaining what a lot of that interest is in
10 that area.

11 Business models wasn't something that
12 somebody said, you know, the business models, it's
13 not clear what the business models are going to
14 be. But what we kept hearing was the different
15 needs that we had, the different gaps that people
16 would introduce, we felt it really goes back to a
17 different set of business models, that people were
18 using business models differently, they had their
19 own concepts of what was the business model, how
20 they were trying to introduce this technology.
21 And it was creating, we felt, a lot of confusion
22 in this area. And there was a lack of alignment
23 in some areas because of that.

24 Again, we kept trying to talk about
25 technology but it kept coming back to it's the

1 policy, it's policy, it's policy was very
2 important. And then as well as the integration
3 optimization operation, similar to what Chris was
4 talking about with microgrids.

5 One of the -- We really felt that this
6 lack of a clear business model is inhibiting the
7 development of a DR industry. Distributed energy
8 resources is going to require a lot of interaction
9 between customers, suppliers, the system -- as
10 Susan mentioned, all of these benefits that are
11 out there. It's going to be a need for a lot of
12 interaction between these different types of
13 entities.

14 And right now it's still too early to
15 tell which is going to be the most successful
16 business model, but as we've already seen,
17 distributed generation is going in, people are
18 using business models, but are they the ones that
19 are going to be ultimately successful?

20 One of the concerns with this lack of a
21 clear business model is that it's preventing
22 private investment. Recently, we've seen a lot of
23 the venture capital that was going into this
24 industry, it's starting to get pulled back a
25 little bit, it's getting tougher to come by, and a

1 lot of the investment community has really --
2 frankly, they've gotten fed up with it, and they
3 can't see it. They don't understand how are we
4 ever going to make money with some of this
5 distributed generation.

6 We also think that it obscures the path
7 to technology development. We've gotten into a
8 lot of discussions about communications platforms,
9 for example. What's the right communications
10 platform for distributed energy resources? It
11 really depends. It depends on what you're trying
12 to do with it. It depends, again, on the value
13 proposition that you're providing to the customer.

14 And it also creates a lot of difficulty
15 in understanding any regulatory changes and
16 prioritizing, and what do we really need to change
17 in order to -- what are we really trying to do?
18 Is it important to go to that nth degree of
19 changes here in order to enable distributed energy
20 resources, or are there incremental steps along
21 the way? And then finally, we felt that by
22 analyzing these different business models we could
23 start to identify some that were the most
24 attractive and encourage those.

25 So right now we're engaged in a project

1 with the California Energy Commission, and some of
2 the key objectives for this project right now is
3 we're looking at understanding what are the most
4 attractive value networks -- Value network, I'll
5 define here for a second, is really a group of
6 these business models -- to understand what is the
7 most attractive from the CEC's and California's
8 perspective, for that matter. Understanding what
9 are the technology infrastructure requirements for
10 those, for each one of those value networks. And
11 then understand where there are common needs
12 across the technology, the infrastructure, and the
13 regulatory requirements.

14 What we're not trying to do is really
15 come up with an exhaustive list of all of the
16 possible business models. And we've done this and
17 there's been a lot of -- this industry has gone
18 through a lot of iterations around business models
19 and listing business models, that sort of thing.
20 We're not trying to do that. We're also not
21 trying to pick the particular winning business
22 model, that this is the one, this is the one that
23 we're trying to encourage.

24 I'm going to talk a little bit about the
25 process that we're going to use for this.

1 Basically, we're going to start off by developing
2 the business models, assessing these business
3 models, find out which ones fit best with
4 California's priorities, and then understand what
5 the requirements -- again, gaps in the technology,
6 regulations and infrastructure.

7 We think that what this will do over
8 time is it's going to point us in the right
9 direction that enables an environment that allows
10 DER to succeed, and ultimately brings in more of
11 these business models are having a chance to
12 participate in having some success.

13 One of the key things that we think is
14 important in this whole process is developing some
15 dialogue around all of this. It's not just the --
16 At the end of the game, it's not about Arthur D.
17 Little coming up with here's the list of business
18 models and here's what you have to do, we think
19 there's a tremendous amount of value in the
20 dialogue in getting there. And I think that's one
21 of the important things when you're looking at
22 developing a strategy, it's the dialogue of all of
23 the people in this room.

24 And Edan touched on that before, about
25 what has made interconnection -- where have the

1 successes come from, it's come a lot from the
2 dialogue. Not the Rule 21, necessarily, but the
3 dialogue of people finding the right solution. So
4 we think that it's tremendously important to
5 include this in this process. And we think over
6 time, once we have enabled this environment for
7 distributed energy, we'll bring private investment
8 to it.

9 So let me talk about what we've learned
10 so far in this process. Well, the first thing
11 that we had to do was to define business model.
12 There's a lot of differences of opinion on what
13 exactly is a business model, and we've got that
14 basically down to the basics again, and said what
15 it comes down to is you've got to identify what
16 does the customer need, and answer the question
17 what does my customer want? What value can I
18 provide to the customers? And then understanding,
19 from the technology perspective, what can I offer?
20 Are fuel cells available? Can PV do this and a
21 recip engine do that? What can I do with the
22 technology? What can I offer? What services can
23 I offer my customers?

24 And typically, this is the way that
25 business will look at it. They may not follow

1 exactly this framework, but that's what they're
2 doing, saying what do my customers want, what can
3 we offer them? We put it together, and that's how
4 we create our business model.

5 One of the -- It's interesting, it was
6 back in -- DOE had a conference in, it was back in
7 October, looking at communications requirements
8 for DER. And there was a gentleman in the
9 audience who was from the Internet community. And
10 he looked at all this stuff and he said all we
11 need to do is fix this interconnection problem,
12 and you'll encourage all the business models that
13 you could possibly need.

14 Now, we did it in the Internet industry.
15 Once we had the protocols, the TCIP protocols, it
16 just opened up a whole range of any -- in 18
17 months we tried everything out and everything.
18 And we iterated around all these, a lot of them
19 dropped off, but the ones that have been
20 successful are still sticking around, so that's
21 all we need to do.

22 But one of the things with that is that
23 they were less constrained in many ways in doing
24 that. There weren't many rules and regulations.
25 There was nobody stopping Amazon.com from stealing

1 Barnes and Noble's customers. Nobody said you
2 can't do that because you'll have to do that.
3 You'll have to pay Barnes and Noble if you take
4 that customer away. There wasn't -- There weren't
5 those kinds of constraints.

6 So within, for the DER we need to think
7 about all of these things, about what's the value
8 to the customer, what technology do I have to
9 offer, and then finally, what are the constraints.
10 And we feel that the customers' needs, there's
11 little you can do about the customers' needs. You
12 can educate them, you can try to understand what
13 they need -- They probably don't understand fully
14 what they're going to articulate, you can do
15 something about the technology. You can develop
16 the technology, you can change the technology to
17 benefit the customer's need, and there's -- we
18 also think there's a lot that can be done about
19 the rules and regulations.

20 We've had to define a couple of things
21 here. We talk about business model, and
22 basically, in the comment -- in the basic sense of
23 it, a business model is how a company makes money.
24 That's what it comes down to. That's what they
25 consider. That's my business model is how I make

1 money. And that includes the value proposition to
2 the customer, the market segment, who we're
3 targeting. It includes the whole value chain from
4 where I get my -- from my suppliers to my
5 distributors to service to finally the interface
6 with the customer. It includes the whole cost
7 structure and profit potential, how we're going to
8 make any money doing this, and it also includes
9 the linkages, the important linkages between the
10 different suppliers and customers.

11 And as well includes the competitive
12 strategy: If we do this, what's our competition
13 going to do? If we start to offer this value
14 proposition to a customer, what will be the
15 reaction of our competition?

16 And what we have found in the course of
17 this work is that there are so many business
18 models out there, and there are so many of these
19 business models that really hang together in what
20 we call a value network. And this value network
21 is really the ultimate value proposition to the
22 customer.

23 For example, a recent engine
24 manufacturer. His business model might be I just
25 make the engine, that's all I make, and I'm going

1 to sell it to 12 different packagers and then I
2 don't care what they do with it. But my business
3 model, my value proposition is to provide the
4 lowest cost engine, high-quality, low-cost engine
5 to those packagers. But ultimately, that engine
6 is going to wind up at a customer's site. And
7 that's the ultimate value proposition -- the value
8 proposition we're interested in is the value
9 proposition between the technology itself and the
10 customer.

11 So that's ultimately what -- What we've
12 had to do is put these business models together
13 into these value networks. And I'm going to
14 explain how we went about doing that.

15 The way we did it is, and this is --
16 it's been a lengthy process in going through all
17 of this, and I'm not going to explain exactly how
18 we did all of that, I'm just going to really want
19 to show you the results. And basically, what we
20 did is we looked down at all of the values. What
21 is important to the customers? And then across
22 the top there we listed who would the customers
23 be? Is it the energy supply company, energy
24 delivery, the consumer, or society? We thought
25 there was some values that society was ultimately

1 the customer for.

2 And then we've -- And what's been
3 mentioned quite a bit today, we've talked a lot
4 about -- the other speakers talked a lot about all
5 of these values, and I think one of the key things
6 to remember about distributed energy is all of
7 these values, the challenge has always been, for
8 distributed energy, is bringing all these values
9 together and monetizing them.

10 It's not that -- There have been a lot
11 of studies done that can prove that there is value
12 here, to do this, to do that -- All of these
13 values are real and they've been proven. The
14 issue has always been can I monetize it? Who is
15 going to pay for that value that this DER unit
16 creates?

17 So we've -- the way we did this was we
18 looked at all these different values, and we
19 looked at where the blackballs were, that's
20 because that's where we thought the highest value
21 was that the customer wanted, and then we built a
22 value network around that to support that.

23 So, for example, we created an energy
24 cost-saver value network, very basic. We're going
25 to provide to energy consumers, we're going to

1 provide low-cost energy. That's the value
2 proposition to the customer. And now, there's a
3 whole range of business models that have got to go
4 into that value network, but that's basically a
5 very simple, simple from the perspective of they
6 get more complicated later, but this is the first,
7 one of the first steps we took.

8 We also looked at reliability in power
9 quality, because we know that's been real
10 important, and we built one around that. We just
11 called it perfect power, and this was, again,
12 providing reliability and high-power quality to
13 energy consumers. Now, we looked at -- Why don't
14 we just lump those two together as a business
15 model, because you could do -- the same companies,
16 maybe they want to do both, but we felt that the
17 value propositions are so different to those two
18 customers that we need to keep them split out for
19 the time being.

20 You can charge a premium when it comes
21 to providing perfect power. You're going in the
22 opposite direction when you're trying to reduce
23 costs, when you're trying to do the energy cost-
24 saver value network. You're trying to drive down
25 the cost of energy.

1 Then we also looked at that whole range
2 there on the energy supply and delivery and said,
3 you know, you could create a value network that
4 provided all those values to those two market
5 segments. We also created one that was, we called
6 the DER power exchange, which was just focusing on
7 capacity and energy sales between the energy
8 supply, energy delivery and the energy consumer.

9 We also thought that there was one that
10 you could create around, a value network to create
11 around just green power, just providing customers
12 with that benefit of distributed generation.

13 And then we said we need something
14 that -- There is a value network out there that
15 talks about bringing all these values together,
16 and selling to a whole range of different
17 customers. And so we've called this the value
18 convergence value network, which is really
19 bringing all of this stuff together. So that's --
20 We think that we've got, at this point, the
21 waterfront covered on as far as having all of the
22 values that potentially distributed energy
23 resources can provide to all of the customers.

24 Now, one other thing, I might point out
25 a couple of things here. We took off any

1 constraints about technology, and we took off
2 constraints about regulations and infrastructure.
3 We didn't really say, well, you can't do that
4 today. That was not the purpose. The purpose was
5 let's think about all the things that you could
6 do, start with a clean sheet of paper and say,
7 let's say we wanted to provide this value to the
8 energy supply and delivery market segment, and
9 let's focus on creating that value proposition.
10 And then our next step in our process is to
11 understand what would it take to do that.

12 Some of the things that we've learned
13 along the way here is that we think that there is
14 as much innovation needed around these business
15 models as there is about the technology
16 development itself. It's likely that distributed
17 energy resources is going to need many business
18 models and many new business models to be
19 successful. There was some work done on --
20 Harvard Business School did some research into the
21 Xerox Company. You know, Xerox has been great at
22 developing technologies and has had success when
23 it comes to commercializing those technologies.
24 and one of the things that they found consistent
25 when they went back, when Harvard went back and

1 looked at why is that, why did Xerox have such
2 great hits and then such -- places where they
3 weren't successful? Why was that the case?

4 And they tied it back to, again, the
5 business models. They said where they failed,
6 where Xerox failed is when they tried to take
7 their old business model and apply it to a new
8 technology. They failed when that didn't work,
9 when they tried to do that. When they were
10 allowed to try a whole range of business models,
11 many different business models, they had a lot
12 more success with these technologies. And when
13 they were allowed to try different business
14 models, that's when they had the ultimate success.
15 And it was this iteration around a whole number of
16 business models that was where they had their most
17 successful technology commercializations.

18 And this is something that the private
19 industry struggles with every day. You had
20 mentioned the half-life of these companies being
21 three years? Yeah, they've got three years to
22 figure this out, to try to figure out which
23 business models are they going to pursue, the CEO
24 has got ten or twelve business models that he's
25 got on his plate that says we could do all of

1 these, which one is going to make the most sense,
2 which ones can we do? And let's try to experiment
3 with them and try to find the most successful one,
4 because now we've only got two and a half years
5 before we run out of money.

6 One of the other interesting things
7 about that is, I think, and some of these half-
8 lives of these companies are showing that, the
9 business models they tried didn't work. But some
10 other company is coming along and says I can use
11 that technology that that company had, and they're
12 buying them and they're merging with them. And I
13 think we're going to see a lot of those kinds of
14 things happening.

15 One of the other things that it's fairly
16 obvious, but I think we should -- we need to
17 understand is that each one of these value
18 networks has different needs. Some require more
19 technology -- regulatory changes rather than just
20 pure technology improvements. Some are driven
21 more by hardware improvements than software
22 improvements. The more value you try to extract
23 out of distributed energy resources, the more
24 complex the value network becomes. And the more
25 complicated the issues arise.

1 Now, that sounds obvious, of course it
2 is, but we've been trying to do this for years,
3 we've been trying to look at all of the values
4 that distributed generation provides and saying
5 all we need to do is do all of these things in
6 order to unlock that value. And I think if we
7 sort of step back and maybe prioritize these
8 values, which are the ones that are most important
9 that we want to unlock, we can focus on making
10 those changes, and having maybe less complicated
11 issues around regulations, less complicated value
12 networks, but ultimately maybe more successful
13 business models within these value networks.

14 One thing that we've found through this
15 whole thing is we've gotten a lot of pushback when
16 we've talked about a lack of business models. And
17 that it's not the lack of business models that's
18 preventing DER from moving forward, it is --
19 rather, it's a symptom of the technology
20 infrastructure and regulatory constraints. There
21 have been plenty of companies out there that have,
22 as I mentioned, they've brainstormed the entire
23 list of what they can do, all the different
24 business models, the value networks that they
25 could set up, and the problem is they're always

1 constrained. They're either constrained by their
2 own technology or they're constrained by the
3 regulations and rules constraints.

4 I think it's important when we have
5 these dialogues to understand where people are
6 coming from, where private industry is coming from
7 when they come into these discussions, because a
8 lot of it hinges on these different business
9 models. When people are asking for certain
10 changes to occur, what they're really saying is we
11 need this change so my company can go make money,
12 so it enables our business model.

13 And if we think about going back on that
14 a little bit and saying let me understand why you
15 want that, why do you want to make those changes,
16 and perhaps there are alternatives to making a
17 change -- rather than making change A, you make
18 change B, which maybe is easier to do. That's
19 what we've -- where we've gone so far with this.

20 I'm going to talk briefly about where we
21 go from here. Our next step is to assess these
22 business models, and then to understand the
23 requirements and do a gap analysis. That's the
24 next two steps. And we expect to be complete with
25 that work over the next two months. Again, I want

1 to -- I think there is as much value in this
2 process, in the process itself and in the dialogue
3 it creates as much as the final product.

4 Some conclusions that I just want to
5 leave with you today is you've got to understand,
6 I think a business model is extremely important to
7 DER success, but they're often overlooked and
8 misunderstood. The public sector doesn't always
9 appreciate what it takes to create a successful
10 business, and they're looking at it because they
11 don't understand what's behind that, if there are
12 certain changes, technology that needs to be
13 developed, why is that? Well, the why is because
14 in order to enable my business model.

15 As part of the California strategy, we
16 think it's important to encourage as many business
17 models as possible as part of the strategy. So
18 the strategy shouldn't be to focus on we're going
19 to do this one thing, the strategy ought to focus
20 on we're going to do many things because those
21 many things, I think, are ultimately what's
22 required for DER to be successful.

23 We also think that DER, that the
24 business models are a powerful tool in developing
25 a robust strategy. It's a way to understand where

1 people are coming from, and it's also a way to
2 uncover alternatives. If we don't do that, what
3 else could we do in order to enable a particular
4 business model? And I think it's a great way to
5 test the strategy. There's a whole range of
6 things that we're going to do in the strategy,
7 does that make sense? Would private industry
8 support that? Is someone going to come to the
9 table and offer a value proposition to a customer,
10 because if that's a key part of the strategy is
11 that, then we have to understand that -- I think
12 it's one way to test the strategies, to make sure
13 that there's a company out there that has a viable
14 business model that they could use to achieve that
15 objective in the strategy.

16 Thank you.

17 PRESIDING COMMISSIONER LAURIE: Thank
18 you, Stanley, very much.

19 We don't have time, but we will, and
20 it's been a great set of panel presentations. We
21 can take a minute or two for questions, if anybody
22 in the audience has questions of any of the panel
23 members at this time on any of the subjects
24 covered or on the general subject of strategic
25 planning? Yes, sir? And we need to have you come

1 forward and give your name, please.

2 MR. BURKE: Good morning. My name is
3 Jim Burke. I'm a consultant to the Public Policy
4 Institute of California, and we've started a study
5 on the future role of local governments in the
6 provision and consumption of power.

7 And I just have a general comment, which
8 I guess I could put into a question, but the
9 comment is, as you probably know, local
10 governments, including counties, cities, and
11 special districts, have an important role with
12 DES, including the authority to permit, and as
13 users and as promoters, and in some cases, as
14 representatives. And we're looking at the future
15 of this role and how it could evolve with new
16 legislation and with changing attitudes.

17 So I would hope that the strategic
18 planning process could include some input or some
19 thoughts along the lines of the local government
20 authority.

21 PRESIDING COMMISSIONER LAURIE: Thank
22 you.

23 Yes, ma'am.

24 While we're waiting for the next
25 questioner, is it possible for us to get copies of

1 your presentations, those who have slides?

2 MS. HORGAN: Yes.

3 ADVISOR TOMASHEFSKY: We actually -- We
4 have them.

5 PRESIDING COMMISSIONER LAURIE: We have
6 them?

7 ADVISOR TOMASHEFSKY: So we'll make them
8 available and we'll also post them all after it's
9 all done.

10 PRESIDING COMMISSIONER LAURIE: Great,
11 okay. Thank you very much.

12 Yes, ma'am. Could we have your name,
13 please.

14 MS. NORTON: Good morning. Rita Norton,
15 consultant. I just wanted to make some
16 methodological suggestions in developing the
17 strategy.

18 I was looking for something that would
19 be a forecast document, that would look at energy
20 supply for the future and grid constraints in the
21 future, and then looking at the cases with and
22 without DER. I think that the basis for
23 developing public policy will be aided with
24 looking at those reports.

25 I know the Energy Commission itself does

1 forecasts, but I would like to see the
2 methodology, and maybe the speakers can speak to
3 this at some point, not perhaps right now. But I
4 think our development of the DER strategy will be
5 that much better with forecast information, so we
6 can look at it with the case, without the DER on
7 line and with it, and how that fits into meeting
8 energy supply needs of the future, with particular
9 respect to where utility regions are constrained.

10 And then just one or two other comments
11 on the methodology. In your review of other state
12 agencies and organizations on distributed
13 generation, I think we should be looking at what
14 their public policy is with regards to it, not
15 simply a review of activities.

16 And under specific distributed
17 generation activities considered by the Energy
18 Commission, coming back to the earlier point about
19 with and without doing two different scenarios and
20 then benchmarking up to look at those regions in
21 the state in which there are capacity problems,
22 and looking at how future demand would be met,
23 that that regional emphasis I think is a part of
24 the methodology. I know it's mentioned in various
25 parts of your outline, but I think it should be as

1 well mentioned under part six.

2 So I hope this was a point in time to
3 make those points.

4 Thank you.

5 PRESIDING COMMISSIONER LAURIE: Thank
6 you very much.

7 Does anybody have a question of the
8 panel? Yes, sir, we have time for one more,
9 please.

10 MR. MOSS: Hello. My name is Steven
11 Moss. I'm from the San Francisco Community Power
12 Cooperative.

13 Two quick questions: One, there has
14 been some discussions about the need for good and
15 nice people to get along, but there hasn't been
16 any actual tangible way to bridge that gap,
17 particularly economic ways to bridge that gap, so
18 I'm curious as to -- or the economics for the
19 getting along.

20 And two, we also talked broadly about
21 environmental issues, but we haven't also hit the
22 road on that, and in my area there are two power
23 plants. I'm wondering whether there are specific
24 ways, targeted, strategic ways in which DG can be
25 used to improve the environment.

1 Thanks.

2 PRESIDING COMMISSIONER LAURIE:

3 Response?

4 MR. PRABHU: Well, the getting along
5 part, I think -- I worked for a utility for many
6 years. The two most popular words in any utility
7 are rate base.

8 [Laughter]

9 MR. PRABHU: And there is no reason --
10 Well, let me state this positively -- There are
11 many reasons why the utility rate base should be
12 enhanced when DG is installed. It is a bigger
13 headache to run this network, it is a more
14 complicated network as a result, there are more
15 wires needed, there are more crank phone calls.
16 It is an imposition on a large monolithic
17 organization, used to just these feeders at the
18 periphery.

19 And providing increased rate base to the
20 utility as DG grows will bring about that business
21 harmony, and it won't cost a penny. The less
22 headaches that you have will be more than what,
23 these marginal increase costs you pay.

24 PRESIDING COMMISSIONER LAURIE: Thank
25 you.

1 Susan, did you have a comment?

2 MS. HORGAN: I was just going to make a
3 comment about the environmental aspects, and that
4 is looking at the optimization of the delivery,
5 the generation and delivery system, including
6 distributed generation, can, we think, improve the
7 environmental signature of the system as a whole.

8 PRESIDING COMMISSIONER LAURIE: Thank
9 you very much.

10 At this time I would like to thank our
11 panel for your outstanding presentation, and we
12 appreciate your time very much.

13 [Applause]

14 PRESIDING COMMISSIONER LAURIE: And
15 could we have our next panel, please.

16 Mr. Tomashefsky?

17 ADVISOR TOMASHEFSKY: Thank you,
18 Commissioner Laurie.

19 We're going to go right into our next
20 panel discussion, and we're going to try to see if
21 all the equipment actually connects, so I won't
22 take time with too much introduction.

23 Kevin Duggan is with Capstone Turbines,
24 you probably all or most of you know him. He's
25 going to go ahead and give a manufacturer's

1 perspective on some of the policy, the deployment
2 and barrier issues that we want to address. So
3 I'll let him do that.

4 PRESIDING COMMISSIONER LAURIE: Do we
5 want to have the other speakers up front and ready
6 to go?

7 ADVISOR TOMASHEFSKY: That would be
8 helpful, actually. Steve and David?

9 PRESIDING COMMISSIONER LAURIE: Will
10 Mr. Rubin be here?

11 ADVISOR TOMASHEFSKY: He is here,
12 actually.

13 PRESIDING COMMISSIONER LAURIE: Good
14 morning, Mr. Duggan.

15 MR. DUGGAN: Thank you, Commissioners.
16 Thank you for this opportunity to speak today.

17 I normally use this slide as something
18 of a disclaimer to indicate my affiliations, and I
19 think hopefully you know what they are, so we'll
20 go straight on.

21 PRESIDING COMMISSIONER LAURIE: Can
22 everybody hear okay? No? Kevin, if you can --
23 you're going to have to speak up a little bit,
24 please.

25 MR. DUGGAN: I'm going to get closer to

1 this thing, get kind of intimate with it.

2 PRESIDING COMMISSIONER LAURIE: Yes,
3 very good, thank you.

4 MR. DUGGAN: I just said that the cover
5 indicates my affiliations. I'm with Capstone. I
6 hope you all know who Capstone is. It's in the
7 nature of a disclaimer. My affiliations are with
8 Capstone, and so you can read my comments, and
9 having that footnote.

10 I'm here to talk about the strategic
11 plan and the goals. Much of what I've said
12 actually was covered this morning, but I'll go
13 through my slides -- They're a slightly different
14 color from the others, at least.

15 I think the objective ought to be bigger
16 than just what we can do for distributed
17 generation, but it ought to be really about what
18 we could do to provide a better quality or
19 standard of power and energy for California. So
20 I've suggested that maybe we should start by
21 saying that we want to provide a clean,
22 sustainable, highly efficient, reliable energy
23 future. And then the challenge is how do we
24 achieve this? And the basic belief that I have,
25 and I think many of us have, is that distributed

1 energy resources are going to have a major role to
2 play in achieving this objective.

3 I put a quick definition at the bottom
4 of what I think distributed energy resources is,
5 and I've largely taken that definition from SB
6 1298; that is, generation at or near the source of
7 its use. To answer the question, I wanted to step
8 back a little bit and think about market
9 structure.

10 And this is a very, very simple diagram
11 that I think illustrates at least the players in
12 the marketplace. The blue-shaded bit to the right
13 represents the historical players, the customer,
14 the utility, and utility-owned generation. In
15 recent years we have opined at a few more players
16 to this model, looked at that model and tried to
17 understand why we have difficulties in deploying
18 distributor generation.

19 And you can't explain it from that model
20 alone until you add the most important value
21 driver for this industry, and that is the
22 regulators and the legislators. As I thought
23 about this industry, I realized that virtually,
24 that every player and every transaction, it seems
25 to me, is heavily controlled and regulated. And,

1 in fact, the values and the value proposition in
2 this industry is, in fact, not defined by the
3 customer, but, in fact, is defined by the
4 regulator; hence, this is an industry that employs
5 enormous numbers of lobbyists and attorneys and
6 consultants and people like that.

7 So what does the regulator create in the
8 form of incentives? So I think the traditional
9 regulatory scheme has encouraged utilities, the
10 traditional supplier to provide the customer with
11 some of its energy requirements and it's done a
12 very good job of that. Electricity, it's provided
13 it reliably and safely, and it's provided power at
14 minimal financial exposure, that what the utility
15 model has done very successfully and I think what
16 we forget about sometimes, is that it has managed
17 to put in a capital-intensive infrastructure and
18 spread the risks of that financial infrastructure
19 across a large number of customers.

20 Customers can come and go without having
21 to make any significant financial commitment,
22 because the risk of that asset is spread over an
23 entire customer base. There are all sorts of
24 other financial benefits, I think, that are
25 provided by the utility structure.

1 But as time has gone by, customers have
2 sought other things and the regulatory incentive
3 schemes that are created haven't encouraged the
4 utility, at least, to meet these things. I don't
5 think the utility system and the traditional
6 regulatory structure has encouraged heating and
7 cooling. There doesn't seem to be a tariff for
8 utilities to charge for heating and cooling.

9 Sustainability and renewable resources,
10 I don't sense that that has been incentivized by
11 the traditional scheme. There are some renewable
12 programs, there are incentive payments made for
13 installing photovoltaics as we heard about, but,
14 in fact, you know, basically, what the regulatory
15 regime does is provide some money for people to go
16 and put their own renewable resource in place.
17 And so it doesn't address some of these sort of
18 financial risk issues there.

19 And I'm not sure, I think we can safely
20 say now that the regulatory regime didn't supply
21 us with low-cost power, and that's because of
22 what's happened in the last 12 months, and I think
23 we see the consequences of the interventions.

24 COMMISSIONER PERNELL: Are you
25 suggesting that the private market supplied us

1 with low-cost power?

2 MR. DUGGAN: No, I'm not saying that,
3 I'm saying that the regulatory, the traditional
4 regulatory structure resulted in high-price power.
5 I'm saying that we may be able to -- I will say
6 that we may be able to modify the traditional
7 system so that we can encourage greater efficiency
8 and cheaper power.

9 I think the -- What I'm saying here, I
10 tie low-cost into the word high-efficiency,
11 because what we know is that the efficiency of
12 most of the power plants, the fossil fuel power
13 plants is around 33 percent of the central power
14 plants. And what that means is that for every
15 unit of electricity that you pay for, that comes
16 into your home, there are two units of electricity
17 that you're paying for that are being exhausted
18 into the atmosphere. And that's been like that,
19 that's been the efficiency of our system for many,
20 many years. So there is something inherently
21 wrong with the rules that enable that system to be
22 perpetuated for so many years.

23 And so what I wanted to suggest is that
24 there are some issues and some modifications and
25 adjustments that we could make to the regulatory

1 structure to address some of the issues that are
2 not being addressed at the moment. I think
3 utilities are the most successful electric service
4 providers. They have a history of almost, of a
5 hundred years. They have successfully provided
6 electricity over that time.

7 And I think they should be allowed to
8 own distributed energy resources, to deploy it for
9 grid support and to deploy it onto the customer's
10 site to meet the customer's energy requirements,
11 both electrical, heating and cooling requirements.
12 And that's an effective way of getting the
13 technology that we're talking about today, and I
14 should say not the technology, but the benefits of
15 using this technology to customers, let the
16 utilities use the technology so they should be
17 entitled to own the stuff.

18 There need to be tariffs established
19 that incentivizes efficient fuel utilization
20 through the deployment of cooling and heating and
21 power technologies to meet customers' energy
22 needs. So when I look through the regulated
23 tariffs, I don't see a tariff for anything other
24 than electrical service and a few other bits and
25 pieces, but there's no tariff mechanism that I can

1 see that would persuade a utility to want to sell
2 heat. I don't know how they would do that, but it
3 seems to me that that would be a -- that may be a
4 useful business that the utility could be involved
5 in.

6 Tariffs and other mechanisms should
7 also, could also encourage the use of sustainable
8 and renewable technologies, and maybe utilities
9 ought to be involved in providing that. Last year
10 there was legislation voted down that would have
11 required utilities to provide 20 percent of their
12 energy supplies through renewable resources.

13 The fourth point I have up here is the
14 markets for electricity produced from waste gases,
15 they need to be reestablished. The suspension of
16 direct access means that customers who have excess
17 or wasted gases, landfill gas or flared gases at
18 oil fields cannot produce electricity with that
19 wasted fuel and sell it to a third party because
20 direct access has been suspended. So, therefore,
21 what they're doing is they are continuing to flare
22 and waste that resource. And so it's a problem
23 with the market rules, again, that creates bad
24 incentives.

25 And ESP's, I think at the end of the

1 day, and utilities, the electric service
2 providers, the non-utilities and the utilities
3 should be able to compete on their merits and not
4 through some regulatory advantage and
5 complications with regulations. In addition to
6 that, I've listed out some of the issues, many of
7 the issues that we've already discussed today.
8 But we need regulations and tariffs that are
9 stable.

10 Right now there's a lot of uncertainty
11 about how much the person who installs distributed
12 generation is going to have to pay. There may be
13 or there may not be some exit fees associated with
14 the long-term contracts. There may or may not be
15 some exit fees associated with the utilities
16 previous financial purchase. There may or may not
17 be standby charges. There are all sorts of
18 complications which discourage the deployment of
19 distributed generation.

20 Now, demonstration sites, because the
21 technology is new, people need to learn about how
22 to deploy the stuff. These interconnection
23 standards have already been talked about. Standby
24 rights having -- and exit fees I mentioned before,
25 on the distribution. Wheeling, having produced

1 some power, for example, from a renewable source,
2 there's no distribution tariff for transporting
3 that to a customer if you are, in fact, allowed to
4 sell it to a third party.

5 Somebody also mentioned technology and
6 neutrality. It's an important issue. An example
7 of that is the AB 970 program enables fuel cells
8 to be incentivized if they operate on renewables,
9 such as landfill methane gas. But no other
10 technologies are eligible. So if you can't make
11 your fuel cell work, you can't get the incentive,
12 then you may well be driven to just waste that
13 gas, flare it rather than use it.

14 And, of course, we talked about
15 environmental regulations and SB 1298 I think
16 addresses most of the environmental regulations.
17 But there's one issue that remains and that I
18 would like to suggest to the people here today,
19 and that is that standby or backup power not be
20 included in the category of distributed
21 generation. This chart illustrates the grid
22 system from power plant through to the customer,
23 the load, and the standby generator, in our view,
24 is a part of that system. It's there to support
25 the grid. It doesn't address the issues that we

1 generally think of as having to be addressed by
2 distributed generation.

3 And, for example, and I've said there,
4 standby generators are exempt from the
5 environmental laws, so they don't have to address
6 those issues. They're generally not
7 interconnected into the grid, so they don't have
8 to address the interconnection issues.

9 And that's all I want to say. Thank
10 you.

11 PRESIDING COMMISSIONER LAURIE:
12 Excellent. Thank you, Kevin, very much.

13 ADVISOR TOMASHEFSKY: Next up we're
14 going to have Steven Greenberg to give an actual
15 implementer's perspective, and I'm going to try
16 and get his presentation up while he's talking.

17 PRESIDING COMMISSIONER LAURIE: Good
18 morning, Steven. Good to see you.

19 MR. GREENBERG: Good morning, thank you.

20 So while we're waiting for the disk to
21 boot up --

22 PRESIDING COMMISSIONER LAURIE: No,
23 that's not going to work, because you're going to
24 get yelled at by our transcriber.

25 MR. GREENBERG: Then I'll switch places

1 with Tom, all right.

2 A little bit of introduction. My name
3 is Steven Greenberg. My company is RealEnergy.
4 We own, build, operate, deploy distributed energy
5 resource systems in commercial real estate
6 settings. We're not a manufacturer of technology,
7 we are technology-neutral. We're fuel-neutral:
8 Whatever is the most efficient, cleanest source of
9 fuel is available is what we'll use.

10 And we've had some degree of success in
11 the past two years actually getting systems built
12 and up and running. So the perspective we bring
13 is someone who has been out in the field doing
14 this, making it happen, and I'm going to talk a
15 little bit about how we see the industry and how
16 we see the things that are good and bad and the
17 things that need to change.

18 About another 30 seconds?

19 ADVISOR TOMASHEFSKY: Oh, probably more
20 than that.

21 MR. GREENBERG: Okay. So here is a
22 great story while we're waiting for this. A guy
23 goes to Washington, DC, and -- Are we ready?

24 ADVISOR TOMASHEFSKY: No.

25 MR. GREENBERG: All right. Guy goes to

1 Washington, DC, and you know how everyone knows
2 Michael Jordan plays for the Wizards now, so his
3 plan is he's going to ask his girlfriend to marry
4 him. And they're walking downtown, they go by the
5 Metro Center where the Wizards play, and there's a
6 guy scalping tickets. And so they decide to go in
7 and get the tickets and go see the ball game.
8 And, of course, it's an incredible night, Michael
9 Jordan scores 40-plus points, and the guy will
10 remember this night for the rest of his life.

11 After the game is over, they're walking
12 down the street, they go into a restaurant and he
13 proposes to her and it's a beautiful ring and
14 she's all excited and happy and everything, and
15 when they're done he says, and just think, honey,
16 I'll never forget this night because it's the
17 night I got to see Michael Jordan play basketball.

18 [Laughter]

19 ADVISOR TOMASHEFSKY: You're going to
20 have to talk some more.

21 MR. GREENBERG: I'm going to have to
22 talk some more? All right. It's not booting up?

23 ADVISOR TOMASHEFSKY: No.

24 MR. GREENBERG: All right. Well, it's
25 not booting up, so our presentation will be

1 available on the web and there's hard copies?

2 ADVISOR TOMASHEFSKY: On the web and we
3 will make hard copies.

4 MR. GREENBERG: So, fine. The status of
5 the industry, it's still coming of age. There's
6 positives and negatives. The positives are that
7 the growth prospects are solid across all the
8 technology types, the potential benefits to the
9 grid, to air quality, to the energy sector, to the
10 job market, to the manufacturing sector, and end
11 users is just beginning to be recognized.

12 New legislation, new agencies, incentive
13 programs, etc. all present positive prospects for
14 growth. What are the negatives we see?

15 Inconsistent and conflicting policies coming from
16 various state entities, and probably now is a good
17 time to thank the Commission for attempting to
18 take a lead role in the State of California in
19 establishing what an energy, long-term strategic
20 energy planning policy should be.

21 There are tariff structures that thwart
22 or inhibit the development and deployment of
23 distributed energy resources, things such as
24 standby charges, demand charges, exit fees. There
25 is a complex versus a simplified compliance

1 requirement structure, and in permitting there's
2 many jurisdictions that overlap. There's lack of
3 standardization.

4 The incumbent utilities are slow to
5 embrace private ownership of these resources and
6 having them be part of the infrastructure, and
7 there's a lack of strong DER industry trade and
8 advocacy group. We don't present a very well-
9 solidified industry.

10 So what are some of the barriers that
11 we've encountered? On the private side, there's
12 the distributed energy resource manufacturing.
13 Despite potential, the market is still very slow
14 to develop. There's a lack of diversified and
15 cost-effective product offerings out there for
16 somebody seeking to quit DG or CHP on property.

17 In the retail sector, there's limited
18 competition, there's not a lot of companies like
19 RealEnergy out there offering services to deploy
20 the owner to operate distributed generation on
21 behalf of customers. That needs to expand.

22 The financial community has uncertainty
23 in the underwriting and extending access to debt.
24 This industry will not become a full-fledged
25 industry and part of our infrastructure without

1 the debt markets coming in to finance it.

2 The energy market in general, the future
3 and the extent of deregulation is in question that
4 Kevin talked about, the uncertainty that's out
5 there. And in sort of a new issue, in the wake of
6 September 11th, is obtaining insurance, the
7 ability to obtain insurance for these systems has
8 been brought into doubt and question, and the
9 costs have gone up dramatically due to the
10 terrorist requirements -- terrorist coverage
11 requirements, pardon me.

12 So what are some of the public sector
13 barriers, then, that we've encountered? Let me go
14 back a year ago and start with interconnection.
15 Interconnection, a year ago there was inconsistent
16 interpretation of Rule 21; there was slow
17 application turnaround time, which was contrary to
18 the spirit of Rule 21; and there were delays
19 caused by lack of experience with DG protection
20 system and vague requirements with relay
21 protection and testing. If you'll notice, I
22 pointedly didn't say that any of those applied to
23 utilities, it applied to everybody in the market
24 space.

25 After a year of working together, now

1 the market, California utilities have shown I
2 think a remarkable degree of cooperation under the
3 guidance of the Energy Commission and Scott and
4 Commissioner Laurie and the PUC and Valerie's
5 efforts to work together with the working groups,
6 and we've resolved many of the problems and made
7 the process better. Still have a ways to go. And
8 we continue with the monthly workshops, and I
9 think that sort of cooperation goes specifically
10 to the points that Edan had brought up earlier.

11 Some of the other public sector
12 barriers. On permitting, on air permits, there is
13 still a lack of standardization among the
14 districts, particularly in California, and
15 regarding guidelines for how to measure certain
16 criteria for what the criteria are. I think SB
17 1298 goes a long way in helping to resolve that.
18 I think the federal government, the RAP project is
19 making some good efforts, and EPA itself is doing
20 a lot of good work, especially with the CHP
21 program.

22 On the building permitting side, it's
23 very disjointed. Again, many jurisdictions, they
24 overlap. There's always a question of who wins.
25 We frequently come up to the issue of the Rule 21

1 requirements, the IEEE requirements, the National
2 Electric Code. It's problematic and it needs to
3 be resolved. One way to resolve it is if we had
4 an online resource base, either sponsored by the
5 state or the federal government.

6 And I know there has been some interest
7 expressed, but no action to date. But if there
8 was an online resource where permit officials,
9 where developers, where customers, where
10 manufacturers could go to clearly see the
11 requirements, get lessons learned, see where
12 things have been approved before.

13 Then there's the issue of the rates and
14 tariffs. I will refuse personally, and I think
15 RealEnergy doesn't buy into getting into a war
16 with utilities over rates and tariffs regarding
17 distributed energy resources. I'll say this:
18 Utilities have a monopoly franchise, and when you
19 accept the benefits of a monopoly franchise, I
20 believe you must also accept the responsibility to
21 act in the public interest, even if that interest
22 may be in conflict with your own well being,
23 perhaps, as the monopoly franchise. That's a
24 difficult bridge to gap, but I think it needs to
25 be stated and recognized.

1 But I'll say on the other hand that
2 RealEnergy, and I believe the distributed energy
3 resource community, is committed to establishment
4 of rules, regulations, and tariffs that are
5 barrier-free, that are fair. That is, we're
6 not -- no penalization, but no subsidization
7 either, just a recognition of the true value that
8 distributed energy resources bring, and the true
9 costs that are borne by all parties as well. And
10 I think we can work together and come up with
11 something that's fair.

12 Some of the things that probably need to
13 be changed are demand charges, monthly ratcheted
14 demand charges represent a paradigm that's not
15 applicable anymore. We now have the ability to
16 have time of use or real-time metering. When you
17 have a monthly ratcheted demand charge, the
18 incentive for demand-side management measures can
19 be, you know, reduced by 50 percent, because you
20 can do a great job of energy efficiency, of
21 reducing demand, etc., all month. And then for
22 one 15-minute window, you can lose half of the
23 economic benefit to you.

24 So we need to move to a daily demand
25 charge, not that it costs anybody extra money, but

1 just that it spreads and allocates the cost
2 differently. So you get the benefit of the energy
3 conservation or efficiency you're achieving, when
4 you're achieving it.

5 So what are the opportunities? For
6 growth I think it's clear from our experience that
7 customers want reliability. They do want, even
8 though it's not popular to say, but they do want
9 choices, especially when they're faced with very
10 high rates and/or reliability problems. They want
11 the choice, they want to be able to do something
12 to affect that. They also want lower costs, and
13 sometimes they want price certainty.

14 I think distributed energy resources
15 represents a lower cost alternative to utility
16 investment in many cases, not all. And the
17 potential for distributed generation market growth
18 has been clearly identified by the Power
19 Authority, and I think the Power Authority should
20 stimulate the private market through debt
21 financing and selective and targeted purchases,
22 not going out and trying to buy up the whole
23 market.

24 If the Power Authority would have been
25 successful or would be successful in buying 2,500

1 megawatts of distributed generation, I think we
2 wouldn't have a market for many years, because
3 nobody would be able to buy anything but the Power
4 Authority.

5 In terms of public policy opportunities
6 or where things need to occur, the lack of a
7 cohesive approach across government agencies
8 certainly leads to too much uncertainty and
9 confusion for healthy market development. Having
10 common state goals and objectives that are then
11 supported by uniform policies from the governor's
12 office, from the Energy Commission, from the Power
13 Authority, from the PUC, from the Legislature,
14 etc., that we're working to compliment each other,
15 not be in opposition, would certainly help a lot.

16 And at the end, and here would have been
17 the wonderful slide because the question is, is
18 this stuff really doable after you hear about it?
19 Well, you would have seen pictures of real
20 projects, real combined heating power projects,
21 real solar projects. We have 4.6 megawatts on
22 line that represents 12 projects. We have 8
23 megawatts under construction right now, and
24 through our robust client base, which is pretty
25 diverse in the commercial real estate industry,

1 we're expanding to 65 megawatts by the end of
2 2002. So it is doable, it just needs to get a
3 well-worn path for others to follow.

4 Thank you.

5 PRESIDING COMMISSIONER LAURIE: Thank
6 you, Steven.

7 [Applause]

8 UNIDENTIFIED SPEAKER: Questions?

9 PRESIDING COMMISSIONER LAURIE: No, not
10 yet. My wife is constantly reminding me that some
11 things are better left to the imagination anyway,
12 so it's just as well.

13 [Laughter]

14 PRESIDING COMMISSIONER LAURIE:
15 Mr. Rubin, good morning.

16 MR. RUBIN: Yes, good morning. Well,
17 thank you very much, Commissioners, and everybody
18 else here. I guess I am the sole utility
19 representative, certainly on this panel, and I
20 think it's true for the rest of the day as well,
21 so I guess you'll have an opportunity to determine
22 whether we're good guys or nice guys or all of the
23 above, none of the above, but certainly, in any
24 event, while nice guys may not finish last, I
25 guess I am definitely going last this morning

1 before lunch. So I'll try to make my comments
2 brief.

3 There have been a number of good ideas
4 that have already been presented. I'll provide
5 you with a brief perspective from PG&E's point of
6 view regarding what would be the appropriate role
7 for a CEC DG strategic plan.

8 First of all, despite some perceptions
9 to the contrary, PG&E actually does have a
10 longstanding record of supporting customers
11 installing generation on their premises.
12 Approximately ten percent of our system load is
13 provided by on-site generation. A significant
14 portion of that is, in fact, longstanding load
15 that has been served by a number of large
16 industrial process customers, such as refineries.

17 But more and more, over the last ten
18 years, we have seen a large number of relatively
19 smaller customers, particularly where there's on-
20 site heat needs, such as hospitals, health clubs,
21 etc., hotels, installing smaller and smaller
22 units. And, in fact, over the course of the last
23 year we've seen a significant up-tick in the
24 number of renewable projects, particularly solar
25 projects associated with net energy metering.

1 So there has been, in fact, a fairly
2 significant increase recently on the number of
3 interconnections for distributed generation
4 projects. And while we would certainly admit
5 that, notwithstanding the changes that had taken
6 place around the streamlining of Rule 21, our
7 processes are still a work in progress and we are
8 diligently trying to smooth out the actual
9 implementation of the rules and of the
10 interconnection process.

11 Over the past several years, there have
12 been a number of DG workshops, seminars, hearings,
13 proceedings, etc., before this Commission, before
14 the Public Utilities Commission, before the
15 Legislature. And during those hearings and
16 seminars and workshops, a number of individuals
17 and/or groups have pointed toward barriers to
18 deployment of DG. And most of the barriers have
19 been identified as the interconnection process,
20 the interconnection rules, standby charges,
21 financial incentives, etc.

22 In the wake of the energy crisis -- In
23 fact, leading up to the energy crisis and then
24 during this past year, we've seen a number of
25 different measures undertaken to address many of

1 those barriers, including, as has been mentioned,
2 the interconnection streamlining process; a bill
3 passed last year that waives standby charges for a
4 wide range of different types of DG units,
5 financial inducements in the form of the AB 970
6 dollars that the IOU's are administering. The tax
7 incentives that are provided through a piece of
8 legislation that was passed last year, the
9 introduction of the Ice T by the Public Utilities
10 Commission, which is applicable for some of the
11 larger solar photovoltaic projects.

12 And, of course, one of the best
13 inducements for distributed generation were the
14 record rate increases that were brought into place
15 this past year as well as the rotating outages.
16 I'm not saying those were designed specifically to
17 promote DG, but in point of fact, the daily
18 headlines focusing on the energy crisis I believe
19 was one of the best advertisements and remains one
20 of the best advertisements for various types of
21 demand-side measures, including distributed
22 generation.

23 As Kevin has correctly pointed out,
24 though, there's still an outstanding policy issue
25 regarding whether the charges now in place for the

1 Department of Water Resources will be bypassable
2 or not bypassable by DG.

3 And there are also a number of other
4 initiatives under way, and we're going to be
5 hearing about many of them this afternoon,
6 including programs operated or being implemented
7 by the California Power Authority, the ISO, draft
8 legislation that might require a renewable
9 resource procurement as part of an overall
10 procurement portfolio, etc., again, which will all
11 really be focused on stimulating more and more
12 either distributed generation and/or renewable
13 projects.

14 So in the wake of all of this, again, a
15 number of different initiatives have been put into
16 place, a clear increase in the number of projects
17 being interconnected. Our primary recommendation
18 for a strategic plan, and you might expect to hear
19 something like this coming from the old stodgy
20 utility that only recognizes the words rate base
21 when they're spelled out in clear terms, but we
22 would recommend, nonetheless, perhaps taking stock
23 of everything that's happened so far before
24 rushing headlong into different types of
25 stimulation for DG.

1 Again, a number of things have been put
2 into place. They clearly require time to work.
3 But we think that it would be valuable to take a
4 look at how well these different initiatives
5 actually hit the mark, and whether, in fact, we
6 have too many of them, whether or not some of them
7 are perhaps overlapping and causing some confusion
8 in the marketplace, and see if there's a way to
9 try to rationalize the different incentives that
10 had been brought into place so far before
11 introducing new ones.

12 And to do so using some type of a
13 familiar cost benefit framework, again in
14 determining how well DG at this point would need
15 to be stimulated more, in light of the other means
16 by which supply and demand in electricity could be
17 brought into balance or maintained in balance,
18 including energy efficiency as well as central
19 station power plants.

20 It's interesting that the CEC had
21 included, as part of its comments to the Public
22 Utilities Commission about a year ago, and this is
23 in the context of the design of the program to
24 disburse the AB 970 dollars, the financial
25 inducements for different types of DG, presented a

1 critique of the cost benefit analysis that the
2 Public Utilities Commission, Energy Division had
3 performed in putting the program together.

4 And there were a number of very good
5 points that were raised in that critique, which I
6 think are relevant today and ought to be re-
7 examined, frankly, and looked at a little bit more
8 closely, particularly in light of today's
9 circumstances in the energy marketplace, to see,
10 again, what types of incentives are appropriate
11 for DG, in conjunction with a similar examination
12 for energy efficiency and other types of power
13 supply.

14 So with that, I'll limit my comments for
15 now and be available for questions. Thank you.

16 PRESIDING COMMISSIONER LAURIE: Thank
17 you, David, very much.

18 We have time for maybe a question for
19 our panelists. Does anybody desire to ask a
20 question at this point?

21 Yes, sir, if you can come up and
22 identify yourself, please. Good morning.

23 MR. BERMAN: Good morning. I'm Mark
24 Berman with Davis Energy Group. I have a question
25 for you, David -- I don't know your last name,

1 sorry -- and that is what is PG&E's viewpoint or
2 stand with regard to distributed generation being
3 used to reduce overall demand on the part of the
4 customer, and thereby bypass the higher rates and
5 all the things that go with them that are now in
6 place.

7 Does PG&E support the ability to lower
8 demand and, therefore, avoid being charged for
9 that piece of demand, or does it have another
10 viewpoint, or something in between?

11 MR. RUBIN: I think the answer might be
12 partly in between. We have taken a position, and
13 this is in the context of legislation that was
14 being developed last year, which didn't end up
15 passing, regarding direct access and the
16 applicability of the Department of Water Resources
17 charges. There were discussions, and there were
18 two pieces of legislation, if I recall, where this
19 was an issue, but there were discussions at the
20 same time around whether, in fact, a customer
21 putting in an on-site generator would be liable
22 for the costs that the Department of Water
23 Resources has incurred and/or has encumbered in
24 order to provide customer load.

25 So there are two elements to the

1 Department of Water Resources costs under recovery
2 from the January through July period of last year,
3 when they were buying power at much higher market
4 prices, but the amount that was recovered in rates
5 was quite a bit lower, as well as the long-term
6 contracts that the DWR has executed, where a
7 number of people say that they are over market,
8 and there is some element of cost straining
9 associated with those contracts, potentially.

10 Our position is that customers,
11 generally speaking, ought to be liable, at a
12 minimum, for costs that the DWR has incurred so
13 far, or the credit card debt, so to speak, where
14 they've bought power at high prices and weren't
15 getting compensated to the degree that those costs
16 were being incurred.

17 There's another debate around whether,
18 for the long-term contracts, to what extent those
19 contracts are, in fact, above market today. It's
20 all based on prediction of what market prices will
21 be on a going-forward basis. And some will argue
22 that by customers putting in on-site generation,
23 they will help manage any potential future supply,
24 demand and balance, and so there might be some
25 arguments for forgiveness for that latter part of

1 the DWR costs.

2 So I guess, generally speaking, we
3 strongly support that anybody that consumed power
4 between January and July, when DWR was running up
5 big debt, should be liable for those costs. We're
6 more sympathetic to the notion now of going
7 forward based on customers putting in on-site
8 generation that, generally speaking, are going to
9 be helping to contribute to a future better
10 supply-demand balance, might be given some
11 consideration. But that has to really be thought
12 through more fully.

13 PRESIDING COMMISSIONER LAURIE: Okay.
14 Well, thank you, we appreciate that.

15 Thank you, Mark.

16 One more? Yes, sir? And then we'll
17 take one more.

18 MR. FICKES: Yes. Bob Fickes from the
19 California Oil Producers Electric Cooperative. I
20 work with a lot of the good people and a lot of
21 the nice people, and I've got the scars to prove
22 it from both sides.

23 [Laughter]

24 MR. FICKES: One of the frustrations,
25 we've got free fuel, and we've been trying to set

1 up distributed generation, and one of the
2 frustrations in working with especially the IOU to
3 the north -- I won't name them -- but is that we
4 have a hard time getting a straight answer. A lot
5 of the field people have been, for instance, you
6 mentioned that standby charges have been, for DG
7 under I think it's what, 5 megs is now relieved.
8 But I had somebody tell one of my members, just
9 from PG&E, a field guy, that no, he didn't know
10 anything about that.

11 And is there a clearinghouse? I mean,
12 the confusion makes it very difficult to make an
13 economic decision when you're in the field,
14 promoting these things. In this era, a field guy
15 or a single source rather than talking to a lot of
16 different people who may not have the full story
17 or may have it and may have a separate agenda, I
18 don't know what's going on. But is there a single
19 source within PG&E that we could sound these
20 things?

21 Other issues, of course, on interconnect
22 there seems to be a blank check on interconnect
23 that they want and no guarantees on any type or
24 amount that will go down. And we've come a long
25 way on that, but that's another issue is a

1 realistic number on that. Anyway --

2 PRESIDING COMMISSIONER LAURIE: Okay.

3 MR. FICKES: In other words, when did
4 you stop beating your wife?

5 [Laughter]

6 PRESIDING COMMISSIONER LAURIE: Can you
7 answer the question regarding a single source?

8 MR. RUBIN: Can I answer the first
9 question and avoid the second one?

10 MR. FICKES: Yeah.

11 MR. RUBIN: No, it's a fair question,
12 and again, you know, we are -- well, it's a big
13 organization, and that's not by way of excusing
14 any kind of difficulties that you've faced in
15 terms of getting a straight answer, but it's
16 partly I guess more than apology, and we are in
17 the process of making sure that our field people
18 do have a clear script all the way through, in
19 terms of the applicability of standby charges, the
20 responsibility for costs associated with the
21 interconnection study, etc.

22 There are two gentlemen in the back that
23 I'll point to, Jerry Jackson and Dillon Savidge,
24 who work in the tariff and compliance group, and
25 they are probably as close to a one-stop source of

1 information that I could identify with PG&E. And
2 so, and a lot of what they do, again, is really
3 try to make sure that you don't hit the bumps in
4 the road that you've hit already, in terms of
5 getting different answers to the same question
6 from PG&E field people, and/or just simply wrong
7 answers.

8 So it's an issue we recognize and we've
9 been working hard to try to solve it.

10 MR. FICKES: Okay, thank you.

11 PRESIDING COMMISSIONER LAURIE: Thank
12 you.

13 Last question. Can you give us your
14 name, please, sir.

15 MR. MC CANN: I'm with M Cubed, and we
16 consult to the Western Manufactured Housing
17 Communities Association, and I was looking through
18 PG&E's comments and felt that their use of the
19 example of mobile home parks, rather than trailer
20 parks, actually is inappropriate as an example of
21 how distributed generation systems might work.

22 In particular, because the problems with
23 parts, that parts have and the issues they have
24 are not stated in this particular submittal.
25 Parks themselves, there's three things with parks.

1 First off is that the discount that is given by
2 PG&E and most of the other utilities is actually
3 not representative of PG&E's or the other
4 utilities' true avoided cost. Typically, PG&E
5 allows about \$10 per space per month, but they
6 actually collect about \$14 per space per month
7 from the mobile home parks for those charges. So
8 that actually, to a certain extent, that discount
9 is actually a profit center for the utilities.
10 They're actually overcollecting by about four
11 dollars a month.

12 The second problem is that the park
13 utility systems were actually constructed to be
14 transitory systems; that is, the parks were
15 originally designed to only exist for a certain
16 numbers of years, and then be converted to other
17 housing. Well, the fact is, is that state law
18 changed in the '70's that prohibited that
19 transition. And so the utility systems that were
20 built to only last for five to ten years are, in
21 fact, now extended to 30-year extension. And
22 that's primarily because of state policy, not
23 because of somebody's inadequate planning.

24 And then the third thing is, in fact,
25 many of the new park systems that are constructed

1 today do meet utility standards, are cost-
2 effective, and do fall into the discounts, and are
3 actually cost-effective, even with the inadequate
4 discounts. So I think that actually parks, if you
5 look at new existing park systems, really are a
6 good representation of how you can design
7 microgrid systems that actually are competitive
8 and work quite well.

9 Thank you.

10 PRESIDING COMMISSIONER LAURIE: Thank
11 you, sir. Comments are appreciated.

12 MR. RUBIN: I was going to say I'll go
13 along with the motion to strike that part of my
14 testimony.

15 PRESIDING COMMISSIONER LAURIE: Very
16 good. Thank you, David, very much.

17 Before we adjourn for lunch, just let me
18 note that -- I respect the fact that it's
19 expensive for all you business folks to be here,
20 and we hope that you're finding this pretty
21 valuable.

22 This afternoon will be pure
23 entertainment, because you're going to have
24 government agencies here trying to explain what it
25 is that they think that they do, and I think that

1 will be of value for all of us. So if you can
2 find the time in your schedules to be here, I
3 would encourage that.

4 We'll see you back here at 1:15. Thank
5 you very much, and thank you to the panel.

6 [Applause]

7 (Thereupon, the luncheon recess was
8 held off the record.)

9 --oOo--

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1 A F T E R N O O N S E S S I O N

2 ADVISOR TOMASHEFSKY: Welcome back for
3 those of you that are able to get back promptly.
4 You actually have the benefit of hearing the whole
5 discussion. What we're going to do during this
6 part of the panel discussion is look at what state
7 government is doing with respect to DG as well as
8 non-governmental programs as well, and we have a
9 good panel set up.

10 I'll give an overview of what the Energy
11 Commission is actually doing, and then I will turn
12 it over to Julie Fitch, who is Commissioner Bilas'
13 advisor at the Public Utilities Commission.
14 Commissioner Bilas is the key commissioner
15 assigned to DG cases. Then we'll turn it over
16 to -- Jonathan, are you going to -- You're going
17 to speak instead of Randy; is that right?

18 MR. TEAGUE: Yes.

19 ADVISOR TOMASHEFSKY: Okay, just to make
20 sure. And then we'll have Jeanne Clinton from the
21 Power Authority speak, and then Ali Miremadi to
22 talk about what the ISO is doing with respect to
23 DG. And probably after this discussion, you'll
24 probably get an idea that there is a lot that's
25 going on. Some of it is coordinated, some of it

1 is not, and that's one of our purposes here, so
2 I'll start with that.

3 For those of you who don't know where
4 you are, this building is actually the building
5 you're in, down here (indicating). This is the
6 Energy Commission. Our functions, as you know, we
7 like to license power plants. On top of that, we
8 do a lot of other things related to conservation
9 and R&D and those type of things. So I'm not
10 going to elaborate on any of those things, but
11 there it is for completeness.

12 In terms of activities at the Energy
13 Commission, it falls into a variety of different
14 areas. We do have an information role. There is
15 a web page that has an extensive amount of
16 information that's available. It has some good
17 links, provides someone that is trying to figure
18 out what in the world we're doing in California
19 with respect to DG, kind of answers some of those
20 questions and provides some direction to get some
21 of those answers taken care of.

22 We also have been involved with
23 California Alliance of Distributed Energy
24 Resources, which preceded a lot of the DG activity
25 you find at the regulatory level now. We've

1 continued to be involved in consumer education and
2 outreach. I'll talk about some of these a little
3 bit more so, but this is just kind of a snapshot
4 of what we do. So it's information, regulatory,
5 with analysis and funding.

6 Our funding can be found in three areas
7 at the Commission. There's PIER, there is the
8 renewable program, and even with the energy
9 efficiency program, there is funding available for
10 DG that's part of that package as well.

11 In terms of PIER funding, a lot of the
12 research effort, a lot of the solicitations that
13 we've had over the past year have focused very
14 much so on distributed generation. We've had a
15 total of about \$40 million in PIER funding since
16 the program was initiated. There's another
17 outstanding solicitation that would add more to
18 that pot, but the general goal of having clean,
19 efficient, cost-effective, low emissions, those
20 type of things, are really the driving force
21 behind a lot of the work that's being done on the
22 research side.

23 It's very much supportive of what ARB
24 has initiated for its emission regulations, and a
25 lot of the work that comes out of that will end up

1 feeding into allowing DG units to actually meet
2 those standards that will go in place in January
3 2003.

4 In terms of what the Commission actually
5 offers, there are a couple of programs that we
6 have available from the generation side. The
7 renewables program I would arguably say is one of
8 the good things that 1890 actually provided, so we
9 initiated that in March 1998 and it's an incentive
10 that applies to a series of renewable
11 technologies. There's \$100 million that we've
12 allocated through the end of last year, there are
13 some dollars remaining from that, and there are
14 additional allocations to go through 2006.

15 The solar and distributed generation
16 grant program was a by-product of Senate Bill
17 1345, which was focused more on the solar side of
18 hot water heaters and those type of things, and
19 provided some smaller incentives for distributed
20 generation that could meet very stringent emission
21 requirements. And we've had about \$2 million
22 allocated there.

23 So you can see the scope of the two.
24 The renewable dollars are much greater, at least
25 in terms if you compare the two programs. And

1 Julie will talk about the self-gen programs, which
2 is complementary to our existing renewable
3 program, in a little bit.

4 So results to date, we have funded more
5 than \$25 million from the renewable program. You
6 can see that there's 2,000 systems installed to
7 date. There's another 1,000 that are currently
8 being reviewed. It's certainly not large scale
9 power plant, but 17 megawatts of renewable
10 resource is pretty substantial.

11 Now, on the flip side, when you look at
12 the solar and DG grant program, the dollars have
13 really been flowing towards the solar portion of
14 that program, and we haven't had any DG projects
15 really awarded any grants in that particular area.
16 The emissions, the reliability requirements have
17 been stringent, and also, there's other programs
18 that are available that actually offer greater
19 incentives. So it's there for full disclosure,
20 but it's clearly not a program that offers a lot,
21 at least in terms of benefits to distributed
22 generation, but it's there.

23 On the efficiency side, we never really
24 think of, oh, efficiency and distributed
25 generation and look at the parallels of what

1 conservation and moving away from the grid
2 actually do. There actually is financing
3 available that's through this energy efficiency
4 financing program. You can see that there is
5 several million dollars available, although the
6 loan payback makes it very difficult for
7 distributed generation projects to qualify for,
8 even though it is available to those programs, but
9 that could change over time, as the technology
10 costs come down.

11 In terms of regulatory activity, I can
12 talk from a lot of personal experience, we've had
13 a very good collaboration with PUC on DG issues
14 since the proceeding was initiated at the PUC.
15 When we did that, we agreed that we would take the
16 technical interconnection lead and develop
17 standards which we have done, and we continue to
18 work with PUC in administering their Rule 21
19 working group.

20 For me personally, it's a lot of fun,
21 and, as was stated earlier, the benefits of the
22 communication process are almost better than
23 actually refinements in the rule process. I think
24 that we all have come to a much more common
25 understanding of what needs to be done for

1 interconnection, and I think that's a real
2 testimony to the 30 or so folks that actually
3 attend these things on a regular basis.

4 We also participate as a member of the
5 self-gen program development team, which is,
6 again, what Julie will talk about. There is a
7 need to have consistency so there is no overlap
8 between our program and the PUC program, and so
9 there's a lot of input and insight shared amongst
10 both agencies, and we hope to continue doing that.

11 Our information role, we've positioned
12 ourselves as a central point of reference for web
13 site information and we do take a leadership role
14 in terms of the R&D efforts that are going on in
15 the state. And it's really our obligation to get
16 that information out to the industry so that they
17 can take advantage of it. And that also puts
18 together our call for outreach efforts, to try to
19 make customers less frustrated with just trying to
20 deal with the industry and trying to understand
21 some of the pitfalls and issues and just bring
22 everyone up the learning curve. It's not just
23 manufacturers and utility reps, it's consumers as
24 well, and sometimes we tend to forget those
25 issues.

1 And I'll just close with this. Again,
2 we'll have all these presentations posted on our
3 web site. You could check out our web sites and
4 probably go to any distributed-generation-related
5 web site from any of these areas, so I'll leave it
6 at that and I will turn it over to Julie.

7 MS. FITCH: Good afternoon. I'm Julie
8 Fitch from the Public Utilities Commission. I'm
9 currently acting as an energy advisor to --

10 PRESIDING COMMISSIONER LAURIE: Can we
11 hear back here? Julie, these microphones are not
12 good. You really have to speak up.

13 MS. FITCH: Okay.

14 PRESIDING COMMISSIONER LAURIE: Thank
15 you.

16 MS. FITCH: Can you hear me now?

17 PRESIDING COMMISSIONER LAURIE: Yes.

18 MS. FITCH: Okay. This is a challenge.
19 If you get close to the microphone, you close the
20 place where you can move the slides.

21 I'm going to talk a little bit about the
22 PUC self-generation program. Most people
23 probably -- Is there a problem? Okay.

24 I'm going to assume that a lot of people
25 in the audience are actually pretty familiar with

1 the PUC's self-generation program, so I'm going to
2 go over this pretty quickly. The program was
3 created actually by AB 970 in September of 2000.
4 As most folks probably remember, it was created in
5 somewhat of a crisis atmosphere. The word from
6 the Legislature was, you know, get us megawatts
7 now, don't worry too much about program design or
8 all those detaily things, we just want some energy
9 generation.

10 So basically the PUC staff quickly
11 developed a program design and got it out on the
12 street. Hopefully, the idea was to get some money
13 out and encourage distributed generation really
14 quickly.

15 This program is focused on distributed
16 generation on the customer side of the meter
17 because we interpreted the AB 907 goal of the
18 Legislature to be encouraging self-sufficiency on
19 the part of the customer. So we limited it to
20 just that, and we also limited it to -- I think
21 the language of the legislation was actually clean
22 and superclean technologies. So there is
23 definitely a technology preference.

24 Most folks probably know this, but there
25 are actually three levels in the program. Level

1 one is the superclean, I suppose: photovoltaics,
2 wind turbines, and fuel cells. All of these are
3 limited to sizes up to one megawatt, and these are
4 the incentive levels, 450 for that level one;
5 level two is fuel cells that are non-renewable,
6 using non-renewable fuels, 250 a watt; and level
7 three is microturbines, internal combustion
8 engines and small gas turbines. So that's just
9 the technology structure of the incentives.

10 This slide is results so far. The
11 program was actually launched officially last
12 June, in June of 2001, and it's just in investor
13 and utility service territories. So the
14 administrators are listed along the left-hand
15 side. One interesting thing to note is that the
16 PUC decided to try a non-utility administrator in
17 San Diego's area, so the San Diego Regional Energy
18 Office is the administrator in that territory.

19 The first column, or the second column
20 here just shows the budgets for four years worth
21 of program operation, so there's \$500 million
22 available over four years in the IOU service
23 territories. And I just wanted to show the number
24 of applications received, the amount of money
25 requested so far, just in six or seven months, and

1 a total of 51 megawatts. So that's the results so
2 far.

3 And just some more on results, briefly.
4 The cleanest, the level one technologies, that's
5 the PV's and fuel cells with renewable fuel, are
6 taking -- are occupying 25 percent of the
7 capacity, but actually 65 percent of the incentive
8 dollars, so that's probably not a big surprise
9 because there are more incentives available for
10 the cleaner technologies, but it just shows an
11 interesting spread there.

12 This slide, Commissioner Bilas asked me
13 to stick this in. He says that when he was on the
14 Energy Commission, someone suggested at one point
15 that the CEC's Electricity Outlook should say,
16 "Electricity is good, it should be cheap," and
17 that should be the end of the Electricity Outlook.
18 And so anyway, he similarly feels that distributed
19 generation is good and it should be cheap.

20 I guess, just on a sort of Commissioner-
21 specific note, Commissioner Bilas has one year
22 left in his term at the PUC, and he is committed
23 to pushing forward some DG-related issues. He is
24 the assigned commissioner for distributed
25 generation at the Commission, and he, and

1 hopefully with my help, we really would like to
2 push through some more of the regulatory hurdles
3 and get over them in this next year and hopefully
4 promote more distributed generation in the
5 marketplace.

6 I can't speak specifically for the other
7 commissioners, but I do know that there is a high
8 level of interest in distributed generation right
9 now, especially renewable distributed generation.
10 So it's definitely an area of focus. I think to
11 some degree it was a bit of a victim of the energy
12 crisis over the last year and a half, where some
13 larger issues that were being dealt with at the
14 PUC somehow got in the way of distributed
15 generation issues, maybe even by mistake, such as
16 I'm thinking of the direct access situation, for
17 example. It wasn't intentional, but it was sort
18 of a victim of the larger problem. So that was
19 just a brief overview of the self-generation
20 program.

21 Sometimes when I think about the self-
22 generation program and how it came about and how
23 it's being managed, I think of it as sort of the
24 elephant that we brought in to kill the fly. And
25 what I mean is the elephant is the self-generation

1 program and the money associated with it, which is
2 rather a lot of money, and the fly is our -- these
3 little issues, which loom large sometimes: the
4 interconnection issues, the smaller issues that
5 really get in the way. But somehow I think in our
6 haste at the PUC, in developing the self-
7 generation program, we sort of forgot that there
8 are all these other smaller issues.

9 So this is just a listing of some of the
10 things that we are addressing now that are coming
11 up in the near future; in fact, two days from now,
12 on the Commission's agenda there will be the
13 implementation of net metering tariffs for systems
14 up to one megawatt, which is overdue, but it's
15 finally happening.

16 There are ongoing issues with the self-
17 generation program about eligibility of customers
18 and technologies, and there's actually also
19 something else on the agenda in two days to deal
20 with those issues. As Scott and others have
21 mentioned, the interconnection working group is,
22 its work is ongoing and important and we want to
23 support it, and the DG rule-making is continuing
24 at the PUC and I think will become more important
25 in the list of priorities this year, I hope.

1 Just briefly, some of the other detail
2 or fly issues that I think are going to be very
3 important at the PUC and that we want to address
4 in the near term. Rate issues, I know, for
5 example, that the net metering tariffs that I was
6 just talking about being on the agenda on Thursday
7 really only apply to certain technologies and are
8 only in effect through the end of the year, for
9 systems up to one megawatt. And then that was the
10 legislative sunset period.

11 So similarly, with standby charges and
12 waivers, there's sort of uneven, spotty treatment
13 in legislation addressing those issues, and I
14 think one of our challenges is to try to unify and
15 standardize those issues on an ongoing basis so
16 that it's not so confusing and there's not so much
17 transaction cost.

18 I also want to talk a little bit about
19 cost-effectiveness issues. I put they're creating
20 a level playing field, and I just want to say that
21 by saying that, I don't mean -- I want it to be
22 fair, a fair level playing field, in that we take
23 into account the benefits of DG that are not
24 necessarily obvious or not quantified at the
25 moment, such as the environmental benefits, the

1 reliability benefits, the economic development
2 benefits, in terms of jobs, local jobs, things
3 like that, that I think don't get fair due yet,
4 and that needs to be developed a little bit more.

5 Just in terms of a few more long-term
6 policy challenges, which I can't really say much
7 about solutions, but I would just note that
8 distributed generation is definitely being talked
9 about at the PUC in the context of resource
10 planning overall, and also in the context of the
11 market structure issues.

12 I also think, I'm a little bit worried
13 on this third bullet here about whether we need
14 financial incentives on an ongoing basis for DG,
15 especially public financial incentives. I'm
16 worried about creating a boom-and-bust type of
17 cycle that's happened in the past on various
18 technologies and various ideas. I just think we
19 need a little bit more attention to coordination
20 and not over-incentivizing and then dropping out
21 immediately thereafter.

22 And then the last bullet was just a
23 commitment to work with other agencies to
24 standardize our approaches and not duplicate
25 efforts. I think in the example of the self-

1 generation program at the PUC, we didn't actually
2 seek out that role, the Legislature told us we had
3 to create a program and so we did. But there was
4 a lot of difficulty in trying to figure out how to
5 create another program when, for example, the
6 Energy Commission already had some programs and we
7 did our best to try not to step on toes or
8 duplicate, but that was a bit of a challenge.

9 So we definitely want to commit to
10 working better together, and that's all I have to
11 say.

12 PRESIDING COMMISSIONER LAURIE: Thank
13 you, Julie, very much.

14 Scott?

15 ADVISOR TOMASHEFSKY: Next we have
16 Jeanne Clinton, Power Authority.

17 MS. CLINTON: I'm actually going to
18 speak from here, so do I use both of these mics?
19 Is that the deal? Okay.

20 Given that there is this huge block
21 here, I'm thinking I should probably go stand up
22 so everyone can see me. Sorry.

23 I'm not using Powerpoint. The Power
24 Authority works in very real time these days, so
25 any numbers that I were to put on a Powerpoint

1 slide would be outdated before I got them
2 delivered to you.

3 For those of you who are not familiar
4 with our organization, we're just six months old,
5 known as -- The California Power Authority is the
6 short name, but the California Consumer Power and
7 Conservation Financing Authority is the complete
8 name, and I think the key word to bear in mind and
9 distinguish us from some of the other state
10 agencies is the word "financing." So we're
11 basically empowered to finance energy solutions
12 for California to help address issues of
13 reliability and reserves and diversity and things
14 like that. So we're sort of the people's
15 investor, if you will.

16 I just want to make a couple of
17 contextual remarks, and then I'll focus on the
18 specific issue of DG, just so you have a context
19 for our role. Given that our emphasis is on
20 financing, we define the way we can operate in a
21 financing environment is one of three. Obviously,
22 we can be a direct lender; secondly, we can be a
23 broker of solutions where we may not -- people may
24 not need our money, they may have their own
25 capital, but we can help broker a solution that

1 fits into a statewide strategy.

2 And thirdly, we can be an aggregator of
3 technologies. We can sponsor volume procurement
4 activities for target technologies to try to both
5 drive the price down and get the overall quality
6 and performance of the technology. Obviously, we
7 create a sort of better value proposition.

8 We're in the last ten days of preparing
9 our statutorily mandated energy resource
10 investment plan that has to be filed with the
11 Legislature on February 15th. We were given
12 exactly 180 days from inception to do that and
13 we're down to the last ten days. That investment
14 plan is a plan for \$5 billion of investment in
15 California's energy market, at least, or up to one
16 billion of that on the customer's side of the
17 meter, and distributed generation is a major
18 component of our investment plan, and there will
19 be targeting of hundreds of megawatts of
20 distributed generation in our investment plan.

21 Many of you may have looked at that
22 investment plan in its draft form, it's on our web
23 site. It will be changing again by the end of the
24 week. We've been very actively soliciting input
25 and we've received a lot, and we're modifying the

1 plan in real time to respond to what we're
2 hearing.

3 What I want to comment on in this forum
4 is, first of all, the Power Authority is committed
5 to the deployment of distributed generation
6 technology in California. And secondly, we're
7 committed to seeing that technology deployed in
8 sort of a private market setting of private
9 manufacturers, distributors, installers, service
10 companies, actively putting this technology in
11 place. We as a public agency may be financing
12 some portion of this, but we see that, you know,
13 it's a private sector game, working obviously with
14 government as host sites, and in some context with
15 government as a financing agent.

16 Specific strategies that we're employing
17 are three: the bulk procurement activity, to try
18 to bring through volume commitments and
19 purchasing, to try to drive down the effective
20 cost of the technology; and Tracy Seville from our
21 organization has been spearheading that effort
22 focused on three technologies at the moment, fuel
23 cells, combined heat and power microturbines, and
24 decentralized solar. So we're in the midst of
25 that now, in terms of evaluating the opportunities

1 for technology and cost and performance.

2 Secondly, we submitted an application
3 last Friday for the authority to issue industrial
4 development bonds that would allow us to finance
5 the installation of efficiency and DG technologies
6 in manufacturing facilities in the state using
7 tax-exempt financing for these designated private
8 purposes. And that's an example, a second example
9 of our effort to promote the deployment of DG and
10 renewable technologies.

11 And thirdly, as I mentioned in the
12 context of our investment plan, we are working
13 actively with the State Department of General
14 Services, other major state organizations, and
15 talking with local public government agencies in
16 terms of putting together a large-scale commitment
17 to the purchase and deployment of these
18 technologies, many of which we expect we'll
19 finance.

20 So that's sort of an overview of what we
21 do. I should have started out by saying this was
22 all mentioned in the two-page handout that was on
23 the front table the last time I looked, so you
24 didn't necessarily need to take all these notes.
25 And we look forward to participating in the

1 discussion later this afternoon in terms of what
2 can we do collectively to facilitate the
3 deployment of the technologies.

4 PRESIDING COMMISSIONER LAURIE: Thank
5 you, Ms. Clinton, very much.

6 ADVISOR TOMASHEFSKY: Next up we have
7 Jonathan Teague from General Services.

8 MR. TEAGUE: Good afternoon. I'll go
9 ahead and speak from the podium. I also do not
10 have Powerpoint slides today, but I do have some
11 notes, and what I'd like to do is share with you
12 some background facts on the experience that the
13 Department of General Services has had with
14 distributed generation in its various forms.

15 Can you hear me better?

16 PRESIDING COMMISSIONER LAURIE: Yes.

17 MR. TEAGUE: All right, you do have to
18 get close. Okay, let me just rewind a little bit
19 here.

20 What I'd like to do is talk a little bit
21 about the experience of Department of General
22 Services as the State's business services agency
23 with distributed generation technologies. Our
24 role is primarily as a customer and a developer,
25 we're not a policy-making body. We're happy to

1 have a chance to speak here today about what our
2 experience has been, and hopefully this will shed
3 light on some of the implementation and strategic
4 plan issues that distributed generation faces.

5 There are basically five areas I'd like
6 to talk about in terms of our experience in
7 different, I'll go into different depth for each
8 one. First and foremost is the experience with
9 our third-party cogen programs. We also had
10 experience with a third-party solar program. This
11 wasn't solar electric generation but rather solar
12 thermal. But some of the lessons learned from
13 that I think might be useful, looking at
14 distributed generation going forward as a
15 deployment strategy, particularly for public
16 sector facilities.

17 I can talk briefly about our experience
18 with electricity supply in the direct access
19 market. That had for us a component for
20 distributed generation as well. We also have some
21 active distributed generation pilots that are
22 ongoing now. We have a contract with RealEnergy
23 and they're developing three pilots, which I'll
24 talk about. And also, I'll speak briefly about
25 our activities with the California Power

1 Authority.

2 First off, in terms of our experience
3 with large third-party cogeneration plants, the
4 goals of that program, which really got rolling in
5 the early 1980's, were to defer capital outlay at
6 state sites for fixed equipment, things like
7 boiler replacement. This afforded capital budget
8 savings to the site. It also allowed us to obtain
9 the energy efficiency and conservation benefits of
10 cogeneration, which is something we've been after
11 for quite some time. One of our primary goals, of
12 course, is to reduce the state's energy costs. We
13 also wanted to create an opportunity for efficient
14 generation to add to the state's resource base.

15 In terms of the amount of electricity
16 that we've been getting from these plants, it's
17 around 400 gigawatt hours. We don't have real
18 current information and this is scattered among an
19 assortment of different state sites, not all of
20 which are under DGS control. But it's about 400
21 gigawatt hours on an annual basis.

22 There are eight third-party cogeneration
23 facilities, pretty large. They total about 145
24 megawatts of capacity and 15 state-owned
25 cogeneration facilities totaling approximately 114

1 megawatts. Not all of these are running. All of
2 the third-party cogen facilities are operating.
3 Some of the small state facilities are not running
4 right now. There are some lessons I'd like to
5 point out to you about that.

6 The benefits of doing these projects for
7 these host agencies was that they got the thermal
8 output of the units, which was a big help; they
9 also got favorable pricing on electrical power,
10 and also support was provided to the state's grid.
11 Most recently these plants ran flat-out during the
12 emergency periods over the last couple of years by
13 explicit directive. That was not an economic
14 decision at the time, given gas prices, but it was
15 important to have that generation mobilized, so
16 that's what we did. It's also provided some
17 income to the state in terms of the ground leases
18 to the third-party developers, and also, some
19 negotiated project benefits from the revenue
20 streams from these projects.

21 I can talk a little bit about the
22 successes and failures of these projects.
23 Overall, I think it's been a success. The large
24 third-party projects have operated successfully
25 that met the energy needs of the hosts and

1 exported power to the grid where they had
2 contracts to do so. For us, that's a
3 demonstration about the fundamental successful
4 concept of this technology.

5 One of the things that's real clear is
6 that we had to be very diligent in negotiating the
7 contracts in order to deploy these things and
8 actually garner the benefits from them. This
9 negotiation basically protected us from exposure
10 to developer defaults. We also took care to try
11 to assure a strong state financial position when
12 some projects required financial workouts as a
13 result of swings in energy markets in the late
14 '80's.

15 Overall, what we found is that attention
16 to contractual detail was vital. I know that's
17 getting a little ahead of where we are in terms of
18 policy on distributed generation development, but
19 from a customer's standpoint, what's in the energy
20 service contracts is really where the rubber meets
21 the road.

22 One of the things we found for the small
23 state-owned projects is that they're often
24 suffered from a lack of skilled operators, partly
25 due to the difficulty of retaining operating

1 engineers in state service. I think going forward
2 what we would draw from this is that we would need
3 to have good maintenance contracts with third-
4 party maintenance firms for any facilities that we
5 might own and operate ourselves.

6 The success clearly depends on strong
7 sponsorship by people at the facility. Also,
8 deferred maintenance is a critical factor, we
9 realized. This is just an artifact of the state
10 budget process, but oftentimes approval of funding
11 for maintenance was not received and obviously,
12 the project won't run very long on that basis.

13 There were some particular lessons that
14 we learned, maintenance of steam lines and other
15 thermal systems is essential. This is sort of
16 nitty-gritty plant operator stuff that really has
17 to be attended to. Attention to contract terms I
18 mentioned, particularly provisions for defaults,
19 buy-outs and rights to cure.

20 A clear understanding of the project
21 economics we found to be essential in order for us
22 to manage these and actually benefit as a
23 customer. We really had to know as much about the
24 cash flow of the projects as the developers did.
25 So we did, either using internal resources or

1 external consultants, develop detailed cash flow
2 models of these distributed generation projects,
3 so that when we sat down at the bargaining table
4 and were talking contract terms, we knew what
5 money was on the table and could get that for the
6 benefit of our clients.

7 Finally, the training and communication
8 with site personnel has proven essential to
9 sustained operations and reliability. Those
10 basically are the lessons that we took away from
11 our experience with the third-party projects.
12 Obviously, those all apply going forward, and we
13 are using those to construct our playbook for
14 distributed generation projects that we'll go
15 forward with.

16 The second item I mentioned, our old
17 third-party solar program, not a lot to say about
18 that. Nobody is out there installing these
19 systems now. It did demonstrate and expand the
20 market for solar technology of its day; overall,
21 we did about 52 solar projects on a third-party
22 basis. About 30 percent of these are still
23 operating, which is kind of dismal. But in a way
24 it was good. The ones that have been well
25 maintained are still operating.

1 There were some larger economic factors
2 that tended to swamp these projects, and this is
3 something that distributed generation developers
4 need to think about these days as well. Once
5 these projects were deployed in kind of a rising
6 fuel market, gas prices subsequently fell, and
7 this seriously impaired the developer's economic
8 position to the point in some cases where the
9 developers just walked away from the projects.
10 And in some cases the state took them over, and in
11 some cases they were just abandoned in place.

12 There were specific problems with
13 deployment; in particular, things like roof
14 penetrations and mounting of facilities. This is
15 something that we're very aware of as we think
16 about installing photovoltaic arrays on the roofs
17 of public sector buildings. The issue there was
18 who covered repairs for leaks and things like
19 that. Generally, our contracts are strong enough
20 to protect the state's interest, but again, you
21 know, negotiating the contract terms from the
22 customer standpoint is going to be really key.

23 We also had large surety bonds as part
24 of the contracts, and I think that gave us some
25 leverage. One of the things that we found needed

1 to be clearly spelled out in these contracts was
2 disposition of ownership. If, for example, the
3 developer walked away or at the end of the life of
4 the project, most of these were on an accelerated
5 depreciation schedule, so after five years they
6 were fully depreciated. Then what? So the end
7 game needs to be thought about for this equipment
8 as it gets deployed.

9 One of the things we learned is that we
10 should do our own billing, knowing our own thermal
11 inputs. This gets into some really messy
12 accounting, because most public sector agencies
13 aren't really going to want to be in the business
14 of running a back office for energy billing and
15 utility management. But it is important to think
16 about that. One of the things we realized, we as
17 customers needed to have good control of
18 information, and for the developers in the office
19 you need to think about how you're going to share
20 that information with your customers.

21 The second thing we learned was that
22 glass breaks. You'd think that we would know
23 that. But a lot of these facilities were cited
24 at, say, California Youth Authority facilities or
25 correctional facilities, and some of the clients

1 learned that they could lob rocks up on the roof.
2 And so as you deploy these things at some of these
3 sensitive sites, you need to think about how to
4 protect the investment and make sure that it's
5 maintainable. And that's about all I'll say
6 there.

7 Not much to say about the electricity
8 supply program. We came to the direct access
9 market and spent a lot of effort trying to gear up
10 to provide commodity supplies for state sites.
11 Our master services agreements included provisions
12 for installing distributed generation. As the way
13 the market turned, we were never really able to
14 get traction. There was no cost benefit to our
15 clients for them to go direct access at the time.

16 It's a sobering thought, because as we
17 gear up for a distributed generation program we're
18 wondering about the same thing: Is it actually
19 going to be cost-effective for our clients? We're
20 not really at liberty to subsidize distributed
21 generation, per se, for our customers. They have
22 a budget line item they have to live within.
23 Generally, the funding for any projects we do
24 comes out of that line item, so unless we can meet
25 or beat the cost of utility default service, we

1 have a problem and we'll be looking for funding
2 augmentation to make sure the projects pencil out.

3 One of the happier pieces of news to
4 come along is, the pilot projects are doing with
5 RealEnergy, and we have three project sites
6 totaling about 1.8 megawatts. They're using Hess,
7 Microgen, Ingen, Gensets. One of these is
8 strategically located at the Public Utilities
9 Commission in San Francisco, one is at the San
10 Francisco Civic Center, and the other is at the
11 Ellie Huhara State Office Building in Oakland.

12 The goal here is basically to leave the
13 operation of these plants in the hands of the
14 developer. We'll take the thermal benefits and
15 the electricity at an assured discount off the
16 otherwise applicable tariff. They're not planned
17 for export power, just to keep things simple, and
18 they're sized so that approximately as much as
19 one-quarter of the building's total electricity
20 will come from distributed generation. Clearly,
21 there is room to up that a little bit. As long as
22 we're below the lowest point on the load curve for
23 the building, these applications would make good
24 sense.

25 Overall, about 42 to 51 percent of the

1 building's total peak load will come from the
2 distributed generation and the associated thermal
3 utilization equipment. There are clearly benefits
4 to us from doing this: the enhanced reliability
5 of power supply, there is the economic discount,
6 and then there is the thermal energy.

7 In terms of how well this is going to
8 succeed, it's a little too soon to tell. The
9 projects are still in development. So far things
10 are actually proceeding pretty well; after some
11 initial hiccups with interconnection, that seems
12 to be going very smoothly, so that's something to
13 be grateful for.

14 One of the things we've found really
15 critical here, as I've said before with the
16 original third-party cogen projects, is that close
17 working relationships with the site personnel is
18 essential. If you're a DG developer, you need to
19 think about who your customer really is, who
20 actually is going to influence the success or
21 failure of your project. And it may be the people
22 you signed the contract with, but you also need to
23 think it's probably the chief of plant operations,
24 level three, who is actually going to have to be
25 running it.

1 And you need to make sure you make
2 contact with the facility people who actually
3 interface with the equipment. We've found that
4 the RealEnergy projects have gone a lot smoother
5 once we established clear lines of communication
6 and with all the people coming and going from the
7 facilities doing evaluations and measurements and
8 planning and structural evaluation, if there is a
9 single point of contact, that gives the client a
10 lot more comfort and makes them a lot more
11 enthusiastic about the project.

12 The final thing I'll mention, very
13 briefly -- Jeanne pretty much already covered
14 this -- there are three requests for bids that the
15 Power Authority has out now for distributed
16 generation technologies. We're working with the
17 Power Authority to help them review and evaluate
18 those bids as part of an interagency team. Large
19 amounts, if you've looked at the proposal, is
20 about 80 megawatts of solar, from 450 to 900
21 megawatts of combined heat and power DG, and up to
22 370 megawatts of fuel cell DG. All of this is
23 over the 2002-2005 period.

24 So if this comes off, this is going to
25 be a massive infusion of distributed generation.

1 Our role is to help them find homes for all of
2 this. Obviously, we want this to be deployed in
3 the private sector as well as in the public
4 sector, but one of the things we're doing is a
5 review of all available distributed generation
6 sites at public sector facilities, using databases
7 we have, like the state property inventory, just
8 to try to house this.

9 One of the challenges is going to be
10 making sure that this is economically feasible for
11 the sites, because these technologies do need to
12 be deployed in a cost-effective basis. But again,
13 the jury is still out on a lot of those cost
14 parameters. We're doing everything we can to make
15 sure that these things are cost-competitive.

16 And that's about it right now. I'll be
17 happy to answer questions when we get to the end.
18 Thank you.

19 PRESIDING COMMISSIONER LAURIE: Okay.
20 Thank you, Jonathan.

21 ADVISOR TOMASHEFSKY: Next up we have
22 Ali for ISO.

23 MR. MIREMADI: Good afternoon,
24 Commissioners, members of the audience. My name
25 is Ali Miremadi. I'm manager of Client Business

1 Services at the ISO. I'm working in the Market
2 Services Department.

3 One of the responsibilities that my
4 group has is interfacing with a lot of the
5 generators out there that want to do business with
6 us and facilitating a lot of contractual
7 requirements and technical requirements that ISO
8 has before a generator can participate in the ISO
9 markets.

10 During the course of the crisis last
11 year, our group received a lot of calls from
12 distributed generators and units that were below
13 one megawatt that wanted to participate in the ISO
14 markets and make their capacity available to us.
15 The ISO tariff right now currently limits
16 participation in the ISO markets or the wholesale
17 markets to units that are one megawatt and above,
18 and a lot of the DG's that contacted us obviously
19 were smaller than that, and we could not at that
20 point accommodate them.

21 But we saw a need for expanding or
22 allowing the markets, the wholesale markets to
23 accommodate a lot of the units that wanted to
24 participate in our markets, and we are about to
25 undertake a pilot program for distributed

1 generation. Officially, it's called the
2 Aggregated Distributed Generation Pilot Program,
3 or AGDBPP OP, that will allow distributed
4 generation to participate in wholesale markets.

5 There are a lot of challenges ahead for
6 us before we can undertake a program, and part of
7 the role of the pilot program would be to identify
8 those challenges and see if we could solve them
9 before we roll out the permanent program to allow
10 distributed generation to participate in our
11 markets.

12 Before I talk to you on some of the
13 characteristics of the pilot program, I just
14 wanted to briefly talk about the ISO and the
15 scheduling coordinators in our markets to put
16 everything in the right perspective. The ISO
17 receives schedules from generators and loads
18 through entities that we call scheduling
19 coordinators. These are entities that are
20 certified with the ISO for conducting business,
21 and they have the right IT interfaces in place to
22 submit schedules to us. They also are responsible
23 for undertaking the settlements at the retail
24 level, if I may call it that, and with the
25 generators that are out there.

1 Essentially the scheduling coordinators
2 sign up generators and sign up loads or already
3 have generators or loads, in the case of IOU's,
4 and submit their balance schedules to the ISO.
5 The units that are, generating units that want to
6 participate in the ISO market also have a direct
7 relationship with the ISO in the sense that they
8 sign a contractual agreement with ISO, two
9 contracts, and that is what we call the
10 participating generator agreement and a meter
11 service agreement to participate with the ISO, or
12 to participate in ISO markets.

13 The markets that the ISO currently has
14 are what we call the forward markets, which is
15 essentially the day ahead, and the hour-ahead
16 markets, and then the real-time market. In the
17 case of day-ahead and hour-ahead, that's purely
18 energy. And prices are not necessarily forwarded
19 to us. But in the case of the real-time market,
20 which is used for balancing the system on a real-
21 time basis, the generators can go ahead and submit
22 schedules or their bids to us, and the price on
23 the bids that we use in the merit or dispatch
24 system that we have in place, to dispatch these
25 units.

1 And the ancillary services market also
2 has additional requirements for a lot of the
3 generating units that want to participate in that
4 market, and we are -- the units are required to
5 have what we call data processing gates, and these
6 are DPG's for short, that send us the telemetry
7 signals directly from the units to us. And that's
8 a very expensive technology right now, and that's
9 one of the entries to barrier, or a barrier to
10 entry for the distributed generation that we're
11 looking into, and see what we can do about that.

12 But talking a little bit about the pilot
13 program itself, we just announced the program
14 outside to the scheduling coordinators. We are
15 holding a workshop March 8th asking for scheduling
16 coordinators and those distributed generators that
17 would like to participate to attend, to find out
18 about the details and characteristics of the
19 program. And in the pilot program what we are
20 hoping to test or look for are technologies,
21 telemetry technologies out there that are cheaper
22 than what we have right now as a requirement for
23 bigger units, and essentially looking to the
24 possibility of aggregating smaller units into one
25 megawatt or above in specific zones, and allow

1 aggregators to participate via scheduling
2 coordinators submitting the bids of the
3 distributed generator to the ISO.

4 There are several levels or layers
5 involved here. One is the scheduling coordinator,
6 and the distributed generator will have to sign or
7 submit a schedule to us through a scheduling
8 coordinator. And possibly there can be another
9 level of aggregator out, kind of equivalent to an
10 ESP right now in the industry. But, you know,
11 it's -- the distributed generator doesn't
12 necessarily have to go through an aggregator, he
13 can possibly sign with a scheduling coordinator in
14 this pilot program and submit their schedules to
15 us through the scheduling coordinator directly.

16 We are going to be looking at what
17 challenges lie ahead in this pilot program before
18 we roll it out as a permanent program, but
19 essentially, the purpose of this pilot program is
20 to see whether or not there are technologies out
21 there that will allow cheaper telemetry signals to
22 be sent to us. It doesn't have to be real time,
23 it can be near real-time data sent to us. And
24 also, look at the metering and some of the
25 challenges out there in order for distributed

1 generation to participate in wholesale markets.

2 Again, the workshop will be March 8th.

3 We just sent out a notice and I will leave copies
4 of that notice in the front for anyone that would
5 like to pick up and learn a little bit more about
6 this pilot project. I encourage you, if you're
7 interested, to either see me afterwards or pick up
8 a notice and contact the name that's on the notice
9 and reserve a place for your attendance in the
10 workshop.

11 With that, I just wanted to close by
12 saying that we are looking forward to, I guess,
13 dropping one of the barriers that's out there for
14 distributed generation and allow a lot of
15 distributed generation that's potentially coming
16 on line or that is on line right now to
17 participate in the wholesale markets.

18 Thank you.

19 PRESIDING COMMISSIONER LAURIE: Thank
20 you, Ali, very much.

21 Questions of the panel? Commissioner
22 Pernell, do you have any questions?

23 COMMISSIONER PERNELL: Not at this
24 point, thank you.

25 PRESIDING COMMISSIONER LAURIE: Okay.

1 Members of the audience that wish to make inquiry
2 of the government panel?

3 Yes, Edan, please. Can you make sure
4 that you give us your name for the record, please.

5 MR. PRABHU: Edan Prabhu from Reflective
6 Energies. My questions relate to the self-
7 generation program. The AQMD has been buying
8 microturbines because they're superclean, and the
9 level one program does not allow microturbines
10 right now, and the question is why.

11 The other part of that question is the
12 Energy Commission's buy-down program up to 30
13 kilowatts includes solar thermal electric. Now,
14 solar thermal electric is far more viable at one
15 megawatt than it is at 30 kilowatts. But the
16 policy is just the flip-flop. It's permitted at
17 30 kilowatts under their program and is not
18 permitted under the PUC program where a lot of
19 solar thermal would have been deployable but isn't
20 eligible for the benefits.

21 Are these questions available, going to
22 be rectified, or is there something I can do to
23 help get them rectified is my question.

24 MS. FITCH: I suppose that's a question
25 for me to respond to, although I'm not sure how I

1 can. I think the question about the microturbines
2 not being eligible for level one funding, I think
3 the decision was made at the PUC that we were
4 going to include gas-fired technologies under the
5 superclean heading, only if they were being used
6 in combined heat and power applications, just as a
7 matter of policy. It was the preference of the
8 majority of the commissioners. So I'm not sure
9 that that's likely to change.

10 As far as the thermal solar --

11 MR. PRABHU: Well, isn't the review of
12 that policy happening, and shouldn't we be
13 rectifying problems that might have happened,
14 given fresh evidence that is available today?

15 MS. FITCH: I think that there is
16 ongoing work, as far as the program design of the
17 self-generation program. It can be raised at the
18 commission level for consideration, I just can't
19 make a commitment right now.

20 MR. PRABHU: I understand.

21 MS. FITCH: But there certainly --

22 MR. PRABHU: I'm asking what I could
23 do --

24 MS. FITCH: Yes.

25 MR. PRABHU: -- more than what you could

1 do, and I'll get with you to find out what I could
2 do.

3 MS. FITCH: Sure.

4 MR. PRABHU: Thanks.

5 PRESIDING COMMISSIONER LAURIE: Tim, did
6 you want to comment on this?

7 MR. TUTT: Yeah. I'm Tim Tutt from the
8 Renewable Energy Program, the buy-down program
9 here. I just wanted to clarify that solar thermal
10 electric is eligible for our program up to one
11 megawatt and even above one megawatt. We have no
12 upper limit on our program except for a monetary
13 limit on each project.

14 The problem right now is that we have no
15 money left for any systems above 10 kilowatts.
16 We're out of money in that category. When our
17 investment plan is --

18 MR. PRABHU: So it's like a Catch-22 of
19 classic proportions. Thank you.

20 PRESIDING COMMISSIONER LAURIE: Thank
21 you, sir.

22 Any more questions of our government
23 panel? Yes, sir. Good afternoon.

24 MR. WALDE: Good afternoon. My name is
25 Len Walde. My company is Sigma Energy

1 Engineering.

2 And something disturbs that under the
3 heading of distributed generation, renewable-
4 energy-based generation, and combined heat and
5 power. Well, there are two technologies that
6 nobody ever mentions that fits right within that
7 umbrella, and that is anaerobic digestion, and
8 gasification, biomass gasification. Now, there is
9 a lot of technology out there, very good
10 technology out there and it is being employed in
11 other states on a distributed generation basis.

12 I'd like to hear from the panel what's
13 going to happen, if anything.

14 PRESIDING COMMISSIONER LAURIE: I'd like
15 to hear from Mr. Tomashefsky first. Do you have
16 any thoughts on the question, Mr. Tomashefsky?

17 ADVISOR TOMASHEFSKY: Well, I think that
18 those are areas that we need to really give some
19 consideration to. There have been a lot of
20 proposals that have come in this building over the
21 last year and have suggested that there are ways
22 to help, but the programs that we've put in place
23 aren't there to accommodate that.

24 So I think at a minimum we should be in
25 a position to at least re-look at those particular

1 issues and see if there are opportunities to offer
2 incentives to those particular areas.

3 PRESIDING COMMISSIONER LAURIE: So these
4 are technologies that we are aware of, and are
5 worthy of additional analysis and exploration.

6 ADVISOR TOMASHEFSKY: Absolutely.

7 PRESIDING COMMISSIONER LAURIE: Yes,
8 ma'am?

9 MS. CLINTON: Just to respond, the Power
10 Authority has already accepted letters of intent
11 from both types of projects that you mention in
12 the context of power resources. So we're
13 distinguishing our definition of distributed
14 generation to mean primarily on-site consumption
15 of the power. The two types of processes you
16 defined to the extent they want to sell power back
17 into the grid, we are negotiating with, in terms
18 of some small-scale renewable power projects.

19 MR. WALDE: Because my company is
20 currently working on a microgrid concept where we
21 can join together a lot of sources for this type
22 of the raw materials, anaerobic digestion in
23 particular. And then serve the local people and
24 then the excess power goes to the grid.

25 And you need that type of economics to

1 make these projects fly. You know, you can
2 produce a lot of energy, and what do you do, put a
3 load bank in and it never goes to the grid or you
4 sell it to the grid and get some revenue back from
5 it.

6 Thank you.

7 PRESIDING COMMISSIONER LAURIE: Okay.

8 Thank you, sir.

9 MR. KEANE: Hi, I'm Dennis Keane from
10 PG&E. I had a question for Julie.

11 Julie, at the end of your talk, you were
12 talking about wanting the playing field to be
13 level in a fair way, and you mentioned
14 environmental benefits, reliability benefits, and
15 economic development benefits. And I hadn't heard
16 of that third one. Can you elaborate on what you
17 mean by that?

18 PRESIDING COMMISSIONER LAURIE: Did you
19 say economic development benefits?

20 MR. KEANE: Yeah, that's what I think
21 she said. That's what my notes said, anyway.

22 PRESIDING COMMISSIONER LAURIE: Thank
23 you.

24 MS. FITCH: Yeah, I did, actually say
25 economic development, and actually, I'm thinking

1 that might be a question that the Power Authority
2 could talk about a little bit more. Because where
3 I got that idea was actually from their investment
4 plan, the notion that distributed energy sources
5 have localized economic benefits in terms of jobs
6 for -- in the localities in terms of maintenance,
7 and also there's always the production of the
8 technologies, if we could get within California
9 production of distributor technologies, that that
10 would have economic development benefits also.

11 MR. KEANE: Okay.

12 MS. FITCH: That's what I was referring
13 to.

14 MR. KEANE: It's sort of similar to, I
15 think I read a newspaper clipping where I think
16 LADWP has some program now where they give
17 benefits as long as they're produced in Los
18 Angeles.

19 PRESIDING COMMISSIONER LAURIE: Thank
20 you.

21 MR. KEANE: Thanks.

22 PRESIDING COMMISSIONER LAURIE: Yes,
23 sir. Good afternoon.

24 MR. KAYE: Thank you, Mr. Chairman. I'm
25 Loren Kaye with Kahl/Pownall Companies, and I'd

1 like to ask the gentleman from the ISO if the
2 agency plans on billing and metering the DG, the
3 generation that's participating in the wholesale
4 market on a gross basis or a net basis.

5 MR. MIREMADI: For the purpose of the
6 pilot program, we are talking about net basis and
7 not a gross basis. But these are units that are
8 less than one megawatt that we're talking about.

9 MR. KAYE: And is that only going to be
10 for purposes of the pilot program?

11 MR. MIREMADI: That's the scope of this
12 discussion, that's correct. Units that are one
13 megawatt and above right now are required to have
14 gross metering, but less than one megawatt, which
15 is the scope of this effort, we are talking about
16 net metering.

17 MR. KAYE: Thank you.

18 PRESIDING COMMISSIONER LAURIE: Okay,
19 thank you. Anybody else?

20 Yes, ma'am.

21 MS. SHERIF: Yes. Linda Sherif for the
22 Cogeneration Association of California. I have a
23 follow-up question to Mr. Kaye's question.

24 I realize there is a tariff exemption
25 for allowing net metering for certain smaller

1 facilities; however, the tariffs at FERC, in terms
2 of allocation of grid management charge and
3 transmission access charges, do not have any
4 exemptions for any DG of any size. So, one, I'm
5 wondering, is the ISO filing new FERC filings to
6 allow such charge exemptions? That's the first
7 part of my question.

8 And the second part of my question is at
9 FERC the CPUC recently testified that the ISO's
10 gross policies, pursuant to 372(f), are
11 unreasonably discouraging the interconnection of
12 self-generation and cogeneration. And, in light
13 of that CPUC testimony at FERC, is the ISO going
14 to reconsider its gross load policies?

15 MR. MIREMADI: I think that the whole
16 debate of net versus growth, I mean, it's a huge
17 debate and it's being debated right now before
18 FERC. I believe the ISO tariff right now
19 specifically states that units that are less than
20 one megawatt on net metering is okay.

21 MS. SHERIF: For metering, not for
22 charges.

23 MR. MIREMADI: That's correct, for net
24 metering we're talking about, and that's how the
25 charges are going to be allocated. I mean, if you

1 submitted metered data to us that's on that basis
2 and we don't know what your gross load is, how can
3 we assess charges to that? So when you really
4 think about it, essentially that's, you know,
5 settlements follow from the meter data that's
6 submitted to us, and not vice versa.

7 MS. SHERIF: Okay.

8 MR. MIREMADI: Does that make sense?

9 MS. SHERIF: Well, it conflicts with the
10 filed rate at FERC. There is no exemption with
11 the filed rates of FERC.

12 MR. MIREMADI: I do see the conflict
13 that you're pointing at. I want to say this is a
14 pilot program. We are testing a lot of things in
15 this pilot program. One of the things obviously
16 is the ability to aggregate units less than one
17 megawatt to one megawatt to above to participate
18 in our markets.

19 And we have talked internally and we are
20 going to be promoting net metering or we'll be
21 okay with net metering for the pilot program. And
22 to the extent that net metering is being
23 implemented, then settlements follow from those
24 meters, and obviously charges would be assessed
25 based on net meter data and not on gross.

1 If that's in conflict, then, you know, I
2 don't see any conflict there in the sense that the
3 ISO tariff also specifically says that for units
4 that are less than one megawatt, then metering is
5 okay. And I don't know if that answers your
6 question directly or not, but the conflict,
7 personally, I don't see it. But we are promoting
8 net metering for the pilot program.

9 MS. SHERIF: And there was the second
10 part of my question.

11 MR. MIREMADI: Could you repeat that?
12 I'm sorry.

13 MS. SHERIF: It referred to the CPUC
14 testimony that under 372(f) the gross load policy
15 was unreasonably discouraging the interconnection
16 of self-generation and cogeneration, and whether,
17 in light of that testimony at FERC by the CPUC, if
18 the ISO was going to revisit its gross load
19 policies.

20 PRESIDING COMMISSIONER LAURIE: Ali, are
21 you familiar with that testimony?

22 MR. MIREMADI: No, I'm not. I was just
23 going to say I'm not participating in those
24 proceedings and I'm not the witness on that, so I
25 don't think I'm in a position to be able to

1 address that specific concern.

2 PRESIDING COMMISSIONER LAURIE: That's
3 fine.

4 MS. SHERIF: Thank you.

5 PRESIDING COMMISSIONER LAURIE: Thank
6 you very much. Anybody else?

7 If not, I will dismiss and thank the
8 panel very much.

9 [Applause]

10 PRESIDING COMMISSIONER LAURIE: Okay.
11 Scott, there is clearly no need to take a break at
12 this point, so let's talk about the next section
13 and discussion, and what we're looking for from
14 the audience.

15 ADVISOR TOMASHEFSKY: Okay. Before we
16 go to the -- I think given the information we've
17 actually heard so far this morning and seeing how
18 that ties into some of the state government plans,
19 I think the next step is to see, in some respects,
20 how our work is consistent with what's going on at
21 the federal level, at least in terms of DOE's
22 program, which we can touch on very briefly.

23 But then our focus should be on looking
24 at what our direction and our target should be for
25 our own strategic plan, if there are initiatives

1 that we should consider. And to see if there are
2 particular regions within California that can
3 benefit from the focus of a state-wide plan and
4 how we'd like to make that all happen.

5 I think part of the objective is to see
6 if there are opportunities to coordinate some of
7 the state efforts, in terms of some of the things
8 that we're doing, whether it be a simple thing of
9 having regular coordination meetings among the
10 state agencies, or something that's a little bit
11 more thought out and more explicit as something to
12 address.

13 So I think rather than have a couple of
14 panel folks talk about that, I think we're opening
15 up the floor for really any type of suggestion
16 from all of you, in terms of how we should
17 approach this project. And that also goes towards
18 how we would approach developing the plan, whether
19 we should write this in a vacuum and disappear for
20 a few months or whether we should get a working
21 group together or what.

22 So we're really open to some just
23 general discussion.

24 PRESIDING COMMISSIONER LAURIE: Okay,
25 thank you.

1 We would reiterate that we are committed
2 to doing a strategic plan. That strategic plan
3 will lack credibility unless it reflects reality,
4 and the reality must reflect the truth as
5 contained in this room. So we need your input and
6 we need your thoughts, and this is a first
7 opportunity to provide that regarding direction,
8 regarding potential for cooperation regarding
9 potential goals and tactics. There will be
10 additional shots, but the earlier the better.

11 So this is page one and your input at
12 this time would be appreciated. So let me open it
13 up to the public for comments on the subject at
14 hand.

15 COMMISSIONER PERNELL: Commissioner?

16 PRESIDING COMMISSIONER LAURIE: Yes,
17 Commissioner Pernell?

18 COMMISSIONER PERNELL: I think we have a
19 number of people that are a little mic-shy. I
20 know everybody in here is concerned about this
21 subject. Let me give you kind of an overview of
22 what my vision is and what I think it's going to
23 take, which is kind of a holistic approach. And
24 maybe this will stimulate some conversation.

25 I think that our plan needs to be

1 inclusive. That means that all parties need to be
2 at the table: public, private, environmental,
3 community, and someone representing the
4 residential sector, if we're going after that, and
5 what effects it will have on each one of those
6 sectors.

7 I would also think that it needs to be
8 balanced. It needs to include all of distributed
9 generation technologies, not just one or heavily
10 weighted towards one or the other. I think it
11 needs to be a balance, everybody should have an
12 opportunity to play. If you have a good
13 technology, you should be at the table talking
14 about that, and if it proves its worth, then that
15 should be looked at. But it needs to be a
16 balanced approach.

17 It needs not to be heavily on fossil
18 fuels and not on renewable generation. I think it
19 needs to be fair. There shouldn't be any rules
20 that promote one sector over the other. And I will
21 be looking for those types of suggestions for the
22 plan.

23 And I think it needs to be affordable.
24 It doesn't make sense to have a plan and it's
25 heavily subsidized, and then no one wants it or no

1 one buys it. It can't get in the market because
2 it's too expensive. So it needs to be affordable,
3 and there are a number of sectors that -- we've
4 got the industrial customers and we've got
5 residential customers. Some can afford different
6 types of distributed gens and others can't. We
7 need to look at that.

8 But just to sum this up, it needs to be
9 a balanced plan, everybody needs to be at the
10 table, it needs to be fair and affordable. Anyone
11 have any ideas?

12 PRESIDING COMMISSIONER LAURIE: Yes,
13 sir?

14 MR. FICKES: I guess I'll start.

15 PRESIDING COMMISSIONER LAURIE: Could we
16 have your name, please?

17 MR. FICKES: Oh, Bob Fickes with
18 California Oil Producers and Electric Cooperative.

19 A lot of us in this room, you know, have
20 been trying to get distributed generation off the
21 ground, within our own special constituencies for
22 some time now. And if it were easy, we'd be doing
23 it by now. And I think we all can agree that
24 there are some barriers to it.

25 I think really that some of those

1 barriers are starting to fall, and we're getting
2 kind of exciting. I think the comment of being
3 able to sell excess power back to the ISO and
4 smaller is huge, especially for my group.

5 My typical group is flaring gas,
6 dirty -- permitted dirty because it has to be,
7 because the technology is not there to flare it,
8 and we can take that flare gas and turn it into
9 electricity, cogenerate in some cases because
10 there's a great need for heat in our group, and
11 there's I believe, according to the Air Resources
12 Board has permitted about the equivalent of about
13 35 megawatts of gas being flared each and every
14 day in the State of California. We'd like to take
15 that in and make something out of it. We're
16 businessmen, we like to make a profit. But it
17 also helps the environment.

18 But one of the main things that I think
19 needs to really be talked about is getting,
20 because we have had kind of an adversarial --
21 those of us who are trying to develop projects who
22 have had kind of an adversarial role with the
23 utilities, and I think there needs to be some more
24 discussion on getting them together into the fold,
25 and I think Edan's suggestion of, you know, the

1 two most important word are rate base, you know,
2 making it not an irritation for them, because I
3 can understand that it's going to be, a lot of
4 small generators out there are going to be an
5 irritant for the utility or could be, and open up
6 a can of worms.

7 But there needs to be, I think, really
8 some talk about getting them to come to the party
9 and being able to profit from this too.

10 PRESIDING COMMISSIONER LAURIE: Thank
11 you, sir.

12 Yes, sir?

13 MR. BYRON: My name is Jeff Byron with
14 Enerwise Global Technologies, but really here
15 today, Commissioners, I'm representing the Silicon
16 Valley Manufacturing Group. You may be familiar
17 with them. It's kind of a member-run
18 organization -- There's no SVMG staffers here, but
19 there are a few of us that are from a subcommittee
20 called the Distributed Energy Resources
21 Subcommittee.

22 We've determined that this is an
23 important option for many of the companies, SVMG
24 companies. I'd like to thank the Commission for
25 your foresight and the work that you've done on

1 this. We're here today to learn, but also to let
2 you know that we exist and we would very much be
3 interested in working with the Energy Commission
4 on your strategy. We're developing our own right
5 now.

6 And in a nutshell, our strategy is make
7 DER easy. We believe that this may well be an
8 important option, maybe one of the only options
9 that some companies will be facing when they're
10 addressing capacity shortfalls, reliability
11 issues. So we're comprised mostly of end use
12 customers, but we do have some consultants and
13 some vendors that participate as well.

14 So I'm just here to offer our
15 assistance, and we would very much like to work
16 with you because I believe that our goals are very
17 consistent with what I've heard here, and talking
18 with some of your staff members, Commissioner
19 Laurie.

20 PRESIDING COMMISSIONER LAURIE: Thank
21 you, Jeff. The Energy Commission knows SVMG very
22 well, and we would look forward to continuing
23 communications on the Distributed Generation
24 Subcommittee. Is that new? I was not aware that
25 you had formed a subcommittee.

1 MR. BYRON: Yes, it is fairly new.
2 There's maybe four or five subcommittees. This
3 one is a pretty good size for our member group.
4 It's about 20 folks that participate in meetings
5 every other week that focus around education,
6 focus around trying to throw our limited weight
7 around.

8 It's pretty clear to us that what's
9 going on here in Sacramento is important, but
10 everything is probably going to eventually have to
11 pass through San Francisco. We would love to see
12 the different agencies in the state work more
13 closely together in a cohesive way so that some of
14 the great policies you're putting forward here can
15 be enacted.

16 And I know that you're doing some of
17 that. We wholeheartedly endorse it.

18 PRESIDING COMMISSIONER LAURIE: Thank
19 you. I know a lot of your folks, and, please give
20 them my regards.

21 MR. BYRON: Thank you.

22 PRESIDING COMMISSIONER LAURIE: Thank
23 you.

24 Anybody else? Yes, sir?

25 MR. THEROUX: Good afternoon,

1 Commissioners.

2 PRESIDING COMMISSIONER LAURIE: Good
3 afternoon.

4 MR. THEROUX: Michael Theroux, Theroux
5 Environmental. DG is a fragmented industry at
6 best. We're all over the map.

7 I think Scott mentioned earlier today
8 that there has been a number of different requests
9 for a picture of who this industry is. Who are
10 the members? What's changing? What are the
11 companies? What pieces of equipment do they have?
12 How do they interlink? And I might suggest that,
13 as a starting point in this plan, that you try to
14 assist in developing that snapshot.

15 Who is out there right now? What stage
16 are they at? And I think that you might be able
17 to assist best, perhaps, since I work a lot within
18 the non-profit organizations, California Alliance
19 for Distributed Energy Resources on our statewide,
20 but at the national level there are many -- US
21 Combined Heat and Power, Distributed Power
22 Coalition of America -- work with those
23 organizations to go into their memberships and
24 into the communities and find what the
25 technologies are, see how these little puzzle

1 pieces should fit.

2 We're not there yet. We don't have the
3 venues and the roll-out mechanisms that we're just
4 now becoming aware that were necessary, but we do
5 have a lot of little pieces, and I hope perhaps
6 that might be a good place to start with the plan.

7 PRESIDING COMMISSIONER LAURIE:

8 Excellent. Thank you, sir.

9 COMMISSIONER PERNELL: Thank you.

10 PRESIDING COMMISSIONER LAURIE:

11 Ms. Carter? Good afternoon, ma'am.

12 MS. CARTER: Good afternoon,
13 Commissioners.

14 COMMISSIONER PERNELL: Good afternoon.

15 MS. CARTER: I'm Cheryl Carter. I'm
16 with the Natural Resources Defense Council, and
17 we're very supportive of clean DG development in
18 California. And I liked Commissioner Pernell's
19 just short and sweet and very focused list,
20 because that's what a strategic plan is supposed
21 to be is focused, and so I'm going to go through
22 my own, which is quite similar.

23 I'll start off with clean. I think that
24 that has been established as one of California's
25 policies for distributed generation development,

1 technologies -- distributed generation
2 technologies that actually improve the quality of
3 our air. I liked Commissioner Pernell's inclusive
4 criteria, and I do think that this should also be
5 a public process and should include all parties,
6 including the government agencies as well the
7 utilities, and what you might consider to be semi-
8 non-traditional government agencies, including the
9 Air Resources Board, who have done quite a bit of
10 work recently on emission and efficiency standards
11 for distributed generation technologies which
12 absolutely must be incorporated into any kind of
13 strategic plan or criteria.

14 And finally, coordination. All of us in
15 this room, yourselves included, have spent several
16 hundred if not more hours in the last few years
17 working on this issue. And we need to make sure
18 that we take into account all of the work that has
19 already been done, and incorporate it into a plan
20 moving forward.

21 PRESIDING COMMISSIONER LAURIE: Thank
22 you, ma'am.

23 MS. CARTER: Thanks.

24 PRESIDING COMMISSIONER LAURIE: Good
25 afternoon.

1 MR. O'CONNOR: Good afternoon. I'm Todd
2 O'Connor of O'Connor Consulting Services, but I'm
3 here as a private citizen.

4 PRESIDING COMMISSIONER LAURIE: Oh,
5 really?

6 [Laughter]

7 MR. O'CONNOR: That means I didn't ask
8 anybody to pay for my trip.

9 PRESIDING COMMISSIONER LAURIE: I see.

10 MR. O'CONNOR: I've been involved in
11 distributed generation for 12 years in a variety
12 of roles, with utilities and as a consultant. And
13 there's one thing that's clear, for the strategic
14 plan to be a viable working document, it needs to
15 have a clear, articulate mission, backboneed by a
16 clear articulate vision.

17 I think the steps taken today have gone
18 a long way to articulate that vision, and I thank
19 the commissioners for starting the process. But
20 it should not end here, it should not end today.
21 I would suggest that there be a heavy focus on
22 value-added, and the beneficiaries are the energy
23 customers and rate payers of the State of
24 California.

25 And from that there will be other

1 benefits that will arise, such as economic
2 development. The role of distributed generation
3 provides a lot of benefits to a variety of
4 different customer classes who are not represented
5 today. I'm glad to see the Manufacturers
6 Association from this part of California
7 represented, but there are commercial customers,
8 other industrial customers, institutional
9 customers such as school districts who are going
10 to be looking for ways to save costs, given the
11 budget situation in California.

12 And if we can come up with just one
13 solution of how to do that using DG strategically,
14 it is not a niche market, it is a strategic
15 solution that can provide cost-effective benefits
16 and this plan can be a viable active document.

17 I would suggest if there is a budget
18 that allows for it, to go throughout different
19 parts of the state where there is a need for
20 distributed generation or a need for a dialogue
21 with the customers, whether they're residential
22 customers, housing advocates, for example; school
23 districts, small commercial customers who can't
24 afford to go to Sacramento but have their -- if
25 you take a look at their rates, they've gone up 40

1 percent if they're within the service territories
2 of the IOU's.

3 I advocate that you go out and engage in
4 a very active outreach program and that the
5 document reflect the concerns and potential
6 benefits that DG will have for a variety of
7 customers in California.

8 Thank you.

9 PRESIDING COMMISSIONER LAURIE: Okay.

10 COMMISSIONER PERNELL: Thank you.

11 PRESIDING COMMISSIONER LAURIE: Thank
12 you, Todd. Good to see you.

13 MR. PRABHU: Edan Prabhu with Reflective
14 Energies again. The two words, "rate base." You
15 know, if you look around the state, LADWP is
16 putting in lots of distributed generation that
17 they own. SMUD is putting in lots of distributed
18 generation that they own. They don't have the
19 rate base mechanism, but they see it as part of
20 valuable policy. They're grabbing free fuel, such
21 as sunlight and landfill gas and so on.

22 If you look at Edison and PG&E, they're
23 not putting in distributed generation because
24 there is no incentive. I propose a northern and
25 southern alliance, so to speak, where this

1 opportunity to put in distributed generation
2 should be open and inclusive, even with investor-
3 owned utilities. And the mechanism where they get
4 value from it would be rate base. It would result
5 in grabbing these dirty fuels that are spewing
6 into the atmosphere and cleaning up the air.

7 They have a lot of strengths deriving
8 from size and infrastructure that would help
9 promote DG. I think it's time to bury the hatchet
10 on the arguments as to who can do what, and just
11 see this as a good thing and let everybody push
12 forward together.

13 Thank you.

14 PRESIDING COMMISSIONER LAURIE: Thank
15 you.

16 COMMISSIONER PERNELL: Thank you.

17 PRESIDING COMMISSIONER LAURIE: I don't
18 think there's any question but that folks want the
19 hatchet buried; the question is where is it going
20 to get buried, which is often the issue?

21 [Laughter]

22 PRESIDING COMMISSIONER LAURIE: Thank
23 you.

24 Yes, sir?

25 MR. BANKS: Good afternoon,

1 Commissioners. My name is Mark Banks. I'm with
2 Planergy International. We're an energy
3 technology integrator.

4 And I've really appreciated the
5 opportunity to sit and listen to this group of
6 people share some really innovative, positive
7 ideas about taking care of I think all of our
8 concern, which is the provision of viable,
9 reliable, reasonably priced energy for the rate
10 payers of this state.

11 My statement this afternoon is that I
12 think, with all of the intelligence of the state,
13 we can come together and put together a supply of
14 electricity that encompasses distributed
15 generation, energy efficiency, using the wealth of
16 experience and knowledge of the utility companies,
17 both IOU's and municipals; using the technology
18 that's being developed in the Silicon Valley so
19 that we can put together a plan that provides for
20 that power supply at a reasonable price, not just
21 for the next five years, not for the next 25
22 years, but through the next century.

23 Because people are not going to stop
24 coming to the State of California. People will
25 come, and they need to have the same benefits that

1 we've all experienced in our lives being here, of
2 reliable, reasonably priced power.

3 Thank you.

4 PRESIDING COMMISSIONER LAURIE: Thank
5 you, sir.

6 COMMISSIONER PERNELL: Thank you.

7 MS. SMITH: Good afternoon,
8 Commissioners.

9 PRESIDING COMMISSIONER LAURIE: Good
10 afternoon.

11 MS. SMITH: My name is Kari Smith. I'm
12 with PowerLight Corporation. We're a PV
13 manufacturer and installer.

14 I'd like to congratulate you for taking
15 this opportunity to look at DG and to develop a
16 strategic plan, because it's always a great
17 opportunity to take the long view in California
18 and to step back out of our crisis mode and truly
19 involve all the players and to take a coordinated
20 approach.

21 And I guess I would like to echo what
22 Ms. Carter said, is to focus first on clean power
23 as being something that we desperately need in
24 this state, but also to focus on the value of peak
25 power. And that's not something that I heard

1 discussed a lot in this discussion today about
2 distributed generation, but DG does provide a peak
3 power benefit on particularly photovoltaics, which
4 is a natural peaker.

5 So one, I would recommend in this
6 strategic plan, taking the opportunity to look at
7 not only the value of peak DG, peaking DG, but
8 also addressing the barriers and how to achieve
9 these values for individual customers and also for
10 the system as a whole, the California grid. And,
11 in doing so, coordinate closely with the
12 California Air Resources Board and the Public
13 Utilities Commission, which I know you will do,
14 but I'd just like to reinforce that.

15 PRESIDING COMMISSIONER LAURIE: Thank
16 you very much.

17 MS. SMITH: Thank you.

18 COMMISSIONER PERNELL: Thank you.

19 PRESIDING COMMISSIONER LAURIE: Good
20 afternoon.

21 MS. FORTUNE: Good afternoon. My name
22 is Hazlyn Fortune. I'm with the California Public
23 Utilities Commission, with the Office of Rate
24 Payer Advocates, and I'd like to make a brief
25 statement.

1 PRESIDING COMMISSIONER LAURIE: Yes,
2 ma'am.

3 MS. FORTUNE: The Office of Rate Payer
4 Advocates represents the interest of public
5 utility customers. Our primary goal is to ensure
6 the lowest possible rates for consumers,
7 consistent with safe and reliable service.

8 In that light, ORA supports the CEC's
9 efforts to develop a strategic plan for DG, and in
10 doing so, we recommend the following. Number one,
11 we support not including or excluding any
12 particular technology to allow customers the
13 widest possible choice. Number two, we'd like you
14 to consider the costs and impacts on the rate
15 payers for these DG technologies that you'll be
16 considering.

17 Number three, we'd like you to ensure
18 that the costs and benefits of DG are equitably
19 distributed among all users. And number four,
20 we'd like the administration of the tariffs to be
21 comprehensive and fairly easy to understand.

22 Thank you very much.

23 PRESIDING COMMISSIONER LAURIE: Thank
24 you.

25 COMMISSIONER PERNELL: Thank you.

1 PRESIDING COMMISSIONER LAURIE: Yes,
2 sir?

3 MR. TORRES: Good afternoon,
4 Commissioners.

5 PRESIDING COMMISSIONER LAURIE: Good
6 afternoon.

7 COMMISSIONER PERNELL: Good afternoon.

8 MR. TORRES: My name is Steven Torres.
9 I'm with Fuel Cell Energy. We're a manufacturer
10 of stationary power fuel cells.

11 My comments today are kind of a
12 manufacturer's perspective of what we'd like to
13 see in the plan, the strategic plan. We would
14 like to see a strategic plan that supports the
15 development of new, highly efficient and clean
16 technologies, DG technologies. Incentives should
17 be used only as a bridge to allow new emerging
18 technologies to have an inherent first cost and
19 other saddles that they have to deal with
20 initially, to work through those first costs, to
21 work through some barriers, through those high-
22 cost issues to get to a point that they're
23 commercially viable.

24 We've heard today aggregation purchase
25 scenarios that are, in our view, very viable in

1 terms of allowing manufacturers to understand
2 demand, plan for this demand, and deliver to the
3 state and deliver to consumers a cost-effective
4 solution that wouldn't have to be subsidized in
5 the longer term.

6 But I must not let the opportunity that
7 I think we all have of state slip by, the State of
8 California already has taken leadership in DG
9 issues. There is a number of DG companies that
10 are situated in California. There is a number of
11 other DG companies that would like to increase
12 their participation in the state, so I don't want
13 to lose the opportunity of us together to
14 potentially create an industry here in the State
15 of California that would be, you know, the state
16 would be the leaders on DG technologies, not just
17 in California, in the US, but throughout the
18 world.

19 I think there's a real opportunity here,
20 in the short and medium term, for the Silicon
21 Valley to repeat itself and be the DG state. And
22 all of us manufacturers are very willing and
23 committed to put the necessary resources here to
24 make that happen, in terms of jobs, in terms of
25 manufacturing infrastructure, if we can work out

1 the details of a long-term plan that allows to
2 manufacture technologies cost-effectively to serve
3 the needs of the state.

4 Thank you very much.

5 PRESIDING COMMISSIONER LAURIE: Thank
6 you, sir.

7 COMMISSIONER PERNELL: Thank you.

8 PRESIDING COMMISSIONER LAURIE: Anybody
9 else?

10 MS. CLINTON: I'm Jeanne Clinton, with
11 the California Power Authority. In our prepared
12 remarks that we submitted, we identified six areas
13 of activity that could be extremely useful in
14 helping to resolve some of the challenges in front
15 of us in deploying the DG technology.

16 At this time I want to focus on two in
17 particular that I think the Energy Commission
18 could help tremendously with. And both of these
19 refer to the theme of determining beyond the end
20 user, who would be the host for the DG, when the
21 deployment of DG is going to be most beneficial to
22 the power system and to rate payers in general.

23 And in that regard I would like to
24 suggest that there are two issues that be
25 explored. First is an investigation and

1 understanding of the transmission and distribution
2 system benefits and costs associated with DG. And
3 second would be to understand the ideal timing
4 and/or physical geographical deployment of DG, as
5 it relates to the power system.

6 And by that, I mean we're all well aware
7 of the long-term contracts that have been signed
8 on behalf of the state, and we might want to look
9 forward in what years or in what seasons are other
10 sort of characteristics, additional power
11 resources going to be valued, including DG as one
12 of those.

13 Secondly, we're all keenly aware that
14 there are certain geographical areas of the state
15 that are constrained in terms of their access to
16 resources, for transmission and generation
17 reasons. And there might be opportunities to
18 target the location of DG that are beneficial to
19 the general power system and rate payers over and
20 above what might be beneficial to the end user.

21 PRESIDING COMMISSIONER LAURIE: What do
22 you think government/quasi-government could do or
23 should do regarding regional placement of DG?

24 MS. CLINTON: What I'm suggesting is
25 that I think the Energy Commission in particular

1 is a tremendous resource in terms of
2 investigation, studies, research, and analysis.
3 And the ability to identify and to pull together
4 different parties, including the utilities and
5 research organizations, in terms of identifying
6 more clearly where are the benefits and what's the
7 magnitude of the benefits.

8 PRESIDING COMMISSIONER LAURIE: Okay.
9 That's helpful, thank you.

10 MS. CLINTON: Okay.

11 PRESIDING COMMISSIONER LAURIE: Thank
12 you, Ms. Clinton.

13 Anybody else?

14 MR. CURTIS: Good afternoon. My name is
15 Chach Curtis from Northern Power Systems.

16 We've heard from utilities,
17 regulators -- who else -- manufacturers, all
18 types. We haven't heard much from practitioners.
19 Northern Power Systems is a system integrator. We
20 design and build and install DG systems around the
21 country and in California, so we are out in the
22 field selling this stuff every day, and the two
23 biggest hurdles we run into are consumer education
24 and outreach for the customer. They haven't seen
25 a lot of these systems, and they can't go to their

1 neighbors and touch and feel them, and there is
2 not, as we heard, it's a fragmented industry,
3 there is a not a good source of information for
4 the customer yet.

5 I'd love for you guys to address that in
6 your strategic plan, and anything you could do in
7 terms of your web site, other outreach means you
8 guys have to show your support for CHP, cogen, DG,
9 etc. It would go a long way in terms of helping
10 our customers get over that bar.

11 The second biggest hurdle we run into is
12 the looming threat of a return of standby fees,
13 exit fees that really squash our projects, to put
14 it bluntly. We would gladly trade off
15 contributing to the rate base of the utility in a
16 fair and reasonable fashion, in exchange for
17 removing that threat, that looming threat of large
18 standby fees or exit fees upon installation of a
19 DG system at a customer site. So we would love it
20 if you guys could address that as well in your
21 strategic plan.

22 The final point would be, following up
23 on the microgrid conversation that we heard
24 earlier, one of the reason the utilities really
25 dislike DG is that it leaves them in a position of

1 providing backup power to a customer that has DG
2 on site. Microgrids can really help alleviate the
3 need for the utility to play that role, because by
4 putting multiple generating assets in a microgrid,
5 it really very much increases the reliability of
6 that, reduces the need for the utility to play
7 that backup role. So I think that can, again,
8 really offset the need for standby and exit fees.

9 Thanks.

10 PRESIDING COMMISSIONER LAURIE: Thank
11 you.

12 COMMISSIONER PERNELL: Thank you.

13 MR. GALLAGHER: Hi. My name is Dan
14 Gallagher. I'm from the Victor Valley Wastewater
15 Reclamation Authority in Victorville. I think I'm
16 the only representative from a small municipality
17 here, so I thought I'd step up and thank the CEC
18 for the self-generation incentive program.

19 We recently qualified for a grant. My
20 staff today is testing a new generator, and
21 hopefully, as soon as we finish the interconnector
22 agreement, we'll be putting that unit on line,
23 along with our old generator. We'll have a
24 capacity of almost a megawatt, and that will
25 greatly help us be able to meet our own needs and

1 also cut our costs significantly, and I'd just
2 like to thank the CEC for that grant program and
3 certainly, that helps us and the State of
4 California with the energy problem.

5 Thank you.

6 COMMISSIONER PERNELL: Thank you.

7 PRESIDING COMMISSIONER LAURIE: You're
8 welcome. Thanks for coming.

9 Anybody else desire to question,
10 comment?

11 MR. GADDY: Good afternoon. My name is
12 Gordon Gaddy. I'm an advocate for Fuels from
13 Farming. I represent members of the --

14 PRESIDING COMMISSIONER LAURIE: For who,
15 I'm sorry?

16 MR. GADDY: Fuels from Farming.

17 PRESIDING COMMISSIONER LAURIE: Okay.

18 MR. GADDY: I'm talking for the
19 agricultural community.

20 DG represents a good opportunity for the
21 agricultural processors, commodity processors, to
22 try to offset their costs from processing their
23 agricultural commodities by using their biowaste
24 streams and growing biomass specifically for
25 energy.

1 I'd like to see if somebody could sit on
2 that board from the agricultural community, on the
3 panel or whatever?

4 COMMISSIONER PERNELL: Everyone is
5 welcome.

6 MR. GADDY: Great.

7 COMMISSIONER PERNELL: Make sure we have
8 your -- I know Scott has a sign-up sheet, so --

9 ADVISOR TOMASHEFSKY: I actually have
10 his card, so I know where he is.

11 PRESIDING COMMISSIONER LAURIE: All
12 right, thank you. Anybody else?

13 If not, thank you, Scott. Next steps,
14 you cannot be very specific about timing, because
15 we really haven't spoken about it other than it's
16 going to be done in a forthwith manner, but why
17 don't you describe what we expect the next couple
18 of chapters to be.

19 ADVISOR TOMASHEFSKY: What I see as our
20 next step is that we need to circle our own wagons
21 internally to see how we want to play this out,
22 taking the comments we have into consideration.

23 I think with the -- If I remember, with
24 the interconnection workshop we issued an order a
25 few weeks after the workshop, kind of setting the

1 stage how we were going to go ahead and approach
2 developing interconnection rules. I would suggest
3 we do something similar here. This way we can get
4 some input within our own staff and see what type
5 of resource requirements and those things would be
6 needed to make it all work.

7 And then I would recommend that the
8 committee issue a process order, if you will, and
9 go from there.

10 PRESIDING COMMISSIONER LAURIE: Okay.
11 Well, what's going to happen is the Siting
12 Committee, Commissioner Pernell and I will meet
13 and we will be rather specific in the manner in
14 which we're going to pursue the writing of the
15 document. I will tell you, again, that it will be
16 done in a rather fast-paced manner for a number of
17 reasons: There's not an awful lot of time to
18 waste and the issues are at hand. And we will
19 make that document public, we will put it out on
20 the web.

21 I don't know how many more workshops
22 there are going to be before you see something in
23 writing, in the form of a draft or an outline,
24 because we are anxious to get something rather
25 detailed to you.

1 Okay. Scott, anything else at this
2 point?

3 ADVISOR TOMASHEFSKY: No, I would just
4 like to thank the Committee for its indulgence. I
5 would also like to especially thank Mignon for
6 arranging a lot of the details for putting this
7 together, so I am indebted to her.

8 PRESIDING COMMISSIONER LAURIE: Thank
9 you.

10 Commissioner Pernell?

11 COMMISSIONER PERNELL: Well, first of
12 all, let me thank Scott and Mignon for putting
13 together an excellent committee topic.

14 I think from the attendance here,
15 though, it tells us something, that this is an
16 issue that is of importance, not just to the state
17 but to individuals up and down the state:
18 companies, associations, and across the board. So
19 it is something that we will not take lightly. As
20 Scott has said, we want to have a chance to digest
21 the comments. I think a number of themes have
22 come out today.

23 And I want to say it again, that in
24 terms of the agencies, we are working together, we
25 will continue to do that. This is not a document

1 that we're going to just go in a room and decide
2 what to write and put it out there. So there will
3 be a chance to review the document, comment on it,
4 and we want it to be -- I think, and someone said
5 this earlier, what makes it work is if everybody
6 is at the table, we know what your concerns are.
7 It doesn't mean that we're going to act on every
8 concern, I might as well tell you that now, but
9 what it does mean is that we will hear those and
10 we will digest them and come out with a document
11 that I think will be fair.

12 Now, you know, I've said this before and
13 then we've have 3,000 comments, but that's okay,
14 because what happens is, as long as the people in
15 this room and the people in the general public
16 think that we are doing the state's business in an
17 up-front manner and that your concerns are heard,
18 I think we'll have a document that everyone can
19 live with. Everyone is not going to be happy,
20 which will probably include myself, but we are
21 looking for a consensus document, not just one to
22 satisfy any one group or any one commissioner.

23 So I want to end by thanking everyone
24 for coming, and I assure that, in terms of the
25 agencies, we are and we will continue to work

1 together.

2 PRESIDING COMMISSIONER LAURIE: Thank
3 you. I can imagine no more exciting subject
4 within the energy industry than distributed
5 generation. For those involved in the industry
6 directly or indirectly, I am envious of your
7 opportunities. I think government has a role to
8 play, either to a, lead; or b, if not, to get out
9 of the way. One of the purposes of this strategic
10 plan is to determine what, more specifically, that
11 role is, and carry it out in the best interests of
12 all participants.

13 So it's going to be a very active couple
14 of weeks and couple of months. We look forward to
15 your additional participation. And absent
16 anything else, I thank you, and the meeting stands
17 adjourned.

18 (Thereupon, the workshop was
19 adjourned at 3:00 p.m.)

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CERTIFICATE OF REPORTER

I, VALORIE PHILLIPS, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 16th day of February, 2002.

VALORIE PHILLIPS

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345